FROM SHELL

.....TO.....

SHOW ROOM

A Compendium of Useful Information, Covering Every Phase of Poultry Growing from the Egg to Maturity.

By { R. E. JONES
THEO. HEWES

FULLY ILLUSTRATED

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FROM SHELL TO SHOW ROOM.

INTRODUCTORY.

"There is many a slip 'twixt the cup and the lip" is an old and true saying. It is just as true that there are many pitfalls and disappointments between the shell and the show room. The followers of any pursuit imagine their's is the most trying of all. The breeder of live stock is never sure of its value until the check it brings him is on deposit in the bank. The fast horse man has many obstacles to overcome before he sees an animal of his breeding and raising lower the track's record. The dairyman with his elegant string of milkers finds there are others in the race for the top round of the ladder as well as he, and the coveted seat is occupied by some individual who is very reluctant to give it up and who is justified in so retaining it by the rules governing decisions in such cases. No matter how earnest may be the desire to reach the top, he is handicapped in different ways. But, even though disappointments are met with one after another, hope still remains and the party most interested plods along the even tenor of his way, always looking forward in anticipation of meeting the unexpected and of finally reaching the coveted goal. It is this setting up of an ideal and working for that end that inspires men to better and higher things and helps them put aside the hindrances along the way. They have one purpose in view and follow it according to their convictions. And so it goes, each one imagining, as a rule, that his lot is the hardest of all.

If you would know more of these ills and get a good taste of the bitter that goes with the little sweet, follow me through the big stock barns at one of our State Fairs and meet the men who have helped make the world's record in their individual lines. First we come to the fat stock department and meet there many of the old faces and a few new ones. "Well, gentlemen, how is everything this year?" is our greeting to the old exhibitors. "Oh, only so, so, the old heads have to take a back seat this time to give place to a new man." "What's the matter with the old heads?" "Well, we overfed a little the past ten days, resulting in our best stock being off feed a bit, and the boy beat us out."

The fast horse man says "I am still on top, due entirely to luck. I was whipped to a standstill ten days ago by a youngster that never was on the circuit before. He had all track records broken at his home training grounds, but ten days ago his horse got his foot over the halter and went lame on the strength of it."

The dairyman says, "I never was in better shape for a milk and butter test until last Thursday, when two of my best cows got mixed up with some barb wire in the meadow, and the outcome is that the cows I was depending on to pull me through had to be withdrawn. The test is still on and I am competing, but I am beat out by some second grade cows that I sold last year, that are now in the pink of condition and making a record, that I never dreamed was in them when I let them go."

The hog and sheep men had their tale of woe; then we came to our old haunts, the poultry building and learn from the breeders what their success has been. While the poultryman has the advantage of any other class of live stock breeders, due to the fact that six months from the time a pen of birds is mated, he can tell to a certainty whether his mating has proven a success or a failure. There are some other ways where he is at a disadvantage, as the poultry business has many set backs and troubles all its own, and, while they look trivial to the breeders of other classes of live stock, they have much to do with the poultryman's success. As an illustration:

In my first year's breeding of fancy fowls I met with so many set backs and disappointments that I begun to wonder if I was not a complete failure in this direction, and would have given most any price for a book that I might have referred to if for no other reason than to see that others had made the same mistakes as myself and had risen above them. It is true I had poultry papers to which to refer and on one or two occasions I wrote to poultry editors asking for information.

I well remember a fine flock of young Plymouth Rocks that were the pride of the yard. They were

thrifty and started off to grow like weeds, but pretty soon something went wrong. They begun to droop, a few of them dragged their wings and one died. I wrote at once for information to an editor of a poultry paper, enclosing a stamp and a request that he answer by return mail. I waited and watched for that letter like a shipwrecked mariner looks for a sail. One by one the chicks passed over the great divide, until only four of them remained, and they were so weak they could scarcely stand. One day a neighbor came by, and finding me looking at the chicks, stopped, smiled to himself and says, "You had better grease those chicks or they will all die." I said, "Grease them! What do I want to grease them for?" "Why they are lousy; can't you see they are too weak to stand up?" was the rejoinder. I was highly insulted to think he would say my thoroughbred chicks were lousy. (I imagined thoroughbreds were too fine to have lice.) He says, "Catch one of them." I did so, this being a very simple task, as they were too weak to run. "Now look here at the top of this one's head." I looked and actually the big grey lice were so thick they were standing on end. He instructed me to get some fresh lard or butter and grease their heads and under their wings, stating that the chicks would get well and grow. I followed these instructions, not alone with the four Barred Rocks, but with every chick on the place. The result was no more droopy chicks, and they began to grow again.

In just six weeks from the time I wrote the editor for information, I had the pleasure of reading under the head of Questions and Answers this wonderful bit of information: "Your chicks have head lice, grease the top of head, back of neck and under wings with fresh lard or butter." Had this editor answered my letter when I wrote him I would have saved many dollars' worth of chicks, and had more faith in the question and answer department of poultry papers, and felt that poultry editors are what they really should be—a help and guide to beginners.

It was this idea of educating the new breeder to a better way of starting in the business, and avoiding the errors which have wrecked the hopes of many inexperienced ones, who started wrong, with no available reference to correct them, that the authors of this book planned a publication of this kind. It is our aim to tell you in a way that is easy to understand how best to succeed, and what you should avoid in order to succeed. If we can do this we shall feel that we have been well repaid for the time and expense necessary for a work of this kind. In our illustrations we have tried to portray the chicks in different stages of development, so that our beginners may have a good general idea as to how they should look from shell to show room.

THEO. HEWES.

Indianapolis, Ind., Jan. 1, 1903.

HOW TO BEGIN WITH POULTRY.

In producing strong, healthy chicks, it is essential that we go back before the production of the egg. Small, weak, unhealthy parents cannot produce strong, healthy chicks.

First, select your breeders from stock that has not been subject to roup, scaly legs or other diseases. Select birds of good size, as a small hen will usually lay a small egg, and a small egg will hatch a small chick (if any at all, but generally will be a weak germ and never hatch.) While on the other hand, a hen of standard size will usually lay a large egg, which will hatch a strong fluffy chick that if properly cared for will reach maturity and be a credit to the variety it represents.

Your male that heads the pen should be a bird of standard size or over, strong, vigorous and always a good type of the breed he represents, especially strong in as many good points as you can combine in one bird.

After making your selection of breeders place them in a good roomy run, and a good, substantial house that is dry and properly ventilated. Do not overmate your male. I seldom put over ten females to a male and never over twelve, depending on the size of the run. The yard should contain a quarter of an acre to make feeding easy, that is, a yard of this size will produce, if properly located, all the green food they need without having to supply any, as they cannot eat it down or tramp it out. Again, they do better, the eggs hatch better, they have room to take plenty of exercise, and do not sit around and wait for their feed as they do when confined to a small run where there is no green feed. Nothing to take up their time, they naturally become lazy.

Now as to the care of good breeding stock, after we have them in a good comfortable home. Keep a box of grit and oyster shell always before them; fresh water daily. Our morning feed is composed of mixed grains—wheat, oats, rye and barley—fed in a litter in the house, one quart to ten fowls, which keeps them working and busy half the forenoon. At noon I feed a light fed of mash, just what they will eat up clean in a short time. For ten fowls:

One pint of bran and shorts.

One pint of oats and corn ground together, half of each.

To this add a quart of clover heads and leaves, but clover meal or cut clover will do where one has not the clover on hands. Where clover meal is used, add three ounces instead of the quart of cut clover or clover heads, and to this add a half pint of meat scraps or crackling meal, mixing with warm water in cold weather.

I always feed mash at noon, for when fed in the morning they have no work to do, no scratching ahead, but the grain in the litter keeps them working, and the more work the more eggs.

In feeding the crackling meal be very careful that it is ground fine, as the fowls sometimes swallow a large piece of gristle that will not assimilate and a case of crop bound is the result.

Twice a week I substitute green bone for the mash, one ounce to each fowl, more than this is liable to start the bowels to moving unnaturally, unless they are allowed a regular diet of this kind, and my own experience has been that better results come from feeding green bone in this way than to make a regular diet of it.

At night I feed whole corn in the winter and cracked corn during the summer, always in a litter, a quart to ten fowls as before.

In the winter when there is very little green food to be had I keep a head of cabbage hanging from the ceiling by a string, just high enough that they have to reach well up for it, and find this is all that is needed in the way of green food, along with the clover they get in the mash. I always lay in a supply of cabbage late in the fall, pulled up stalk and all and bury for winter use, as this is one of the best and cheapest green foods one can find.

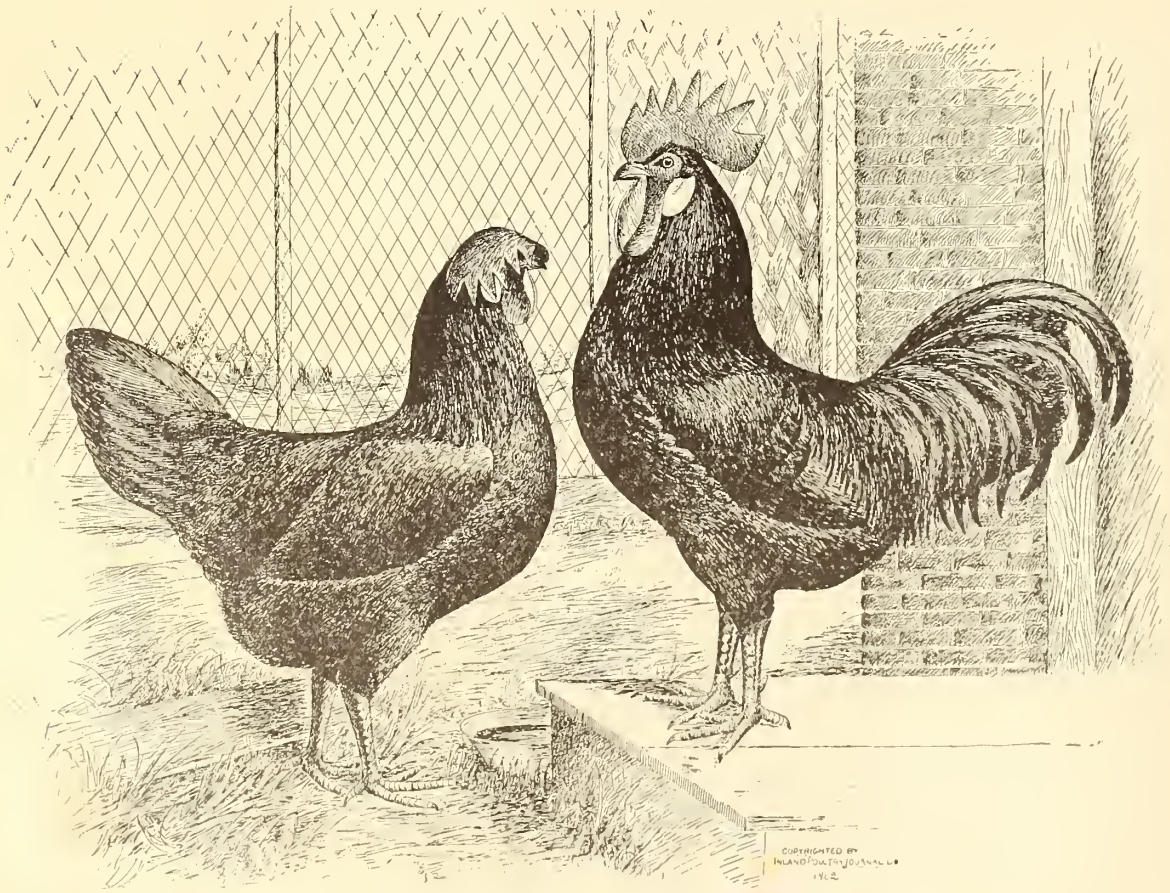
In following this routine of feeding I find it answers all the requirements. The feed is inexpensive and by its use your flock is always healthy, and with the houses kept clean and free from lice, you will have no trouble in getting eggs at all seasons of the year, and eggs that are strong and fertile and will hatch well.

It might be well to take up the lice question right here. I find the easiest and best way to get and stay rid of these little pests is to start before they do. They are worse in summer than in winter and the mites seem to be a summer pest only, but the big grey body lice are with the hens always, and only constant work will keep them down. I use a good liquid lice killer once a week in summer and once a month in winter, painting the roosting perches with it and spraying the dropping boards. No lice will be found around the houses where this rule is practiced. For the nests I use a good lice powder, dusting it in all the nests. This also helps rid the hens of them and I seldom find it necessary to

dust my hens after following this system of house protection, as by the assistance of a good dust bath, which is in each pen, they keep well rid of them themselves.

Always gather the eggs when you go through the building to feed at noon and night. In extremely cold weather I would advise the gathering of them every two hours, if desired to set, as this removes the chance of their being chilled. Always mark the eggs according to which pen or mating they are from. I would suggest the use of some good trap nest, as in this way the record on the egg is not only insured, but the chances are the hen will remain on the nest and keep the egg warm until removed. It is well to make tests occasionally to see whether your male is overtaxed as to number of females. This can be done by setting a few eggs from each hen. If they show strong germs all well; if not, reduce the number of females.

R. E. Jones.



STANDARD BLACK MINORCAS.

FROM SHELL TO SHOW ROOM.

The Setting Hen--Selecting Eggs for Hatching--Testing the Eggs and Taking Off the the Chicks.

In selecting eggs for hatching always try to pick out the largest and smoothest shelled ones. Never set a rough, thin shelled or crooked egg if using hens for incubating, as they are almost sure to break them, and they are seldom fertile; but sometimes a very valuable hen will insist on laying eggs of this kind, and then I would suggest that they be set in an incubator, and placed in such a position in the tray that other eggs do not crowd them, as in this way we often run a chance of getting some good chicks from them.

When eggs are to be used for hatching purposes, always get them as fresh as possible. I never set an egg over fifteen days old, and as much fresher as I can get them. In placing them in the machine or under hens always mark the date of setting and what pen they are from. If from a number of pens I select all from one pen and put under one hen, all from another pen under another hen, and so on. This is done for two reasons. First, when I test them out I can tell how the eggs from a certain pen are running in fertility. Second, if I want to mark the chicks when hatched I can do so at once, as I remove them from the nest and run no chance of their getting mixed. I use the toe marker and keep a record of all the different pens so that when they are fully developed I can tell just what each mating has produced, and I am governed accordingly in mating for the next year.

The pedigree trays in an incubator answer the same purpose, as the eggs can be kept separate and the chicks when hatched if so desired. However, but few of the incubator companies have solved the pedigree tray problem. Several of them keep the chicks separated, but do not allow of their dropping down into the nursery as they should. There is room for improvement here and I trust some enterprising company may come to the rescue.

When plain trays are used you can tell how certain eggs are testing out, and you know whether the male bird in the pen is strong or weak as a breeder.

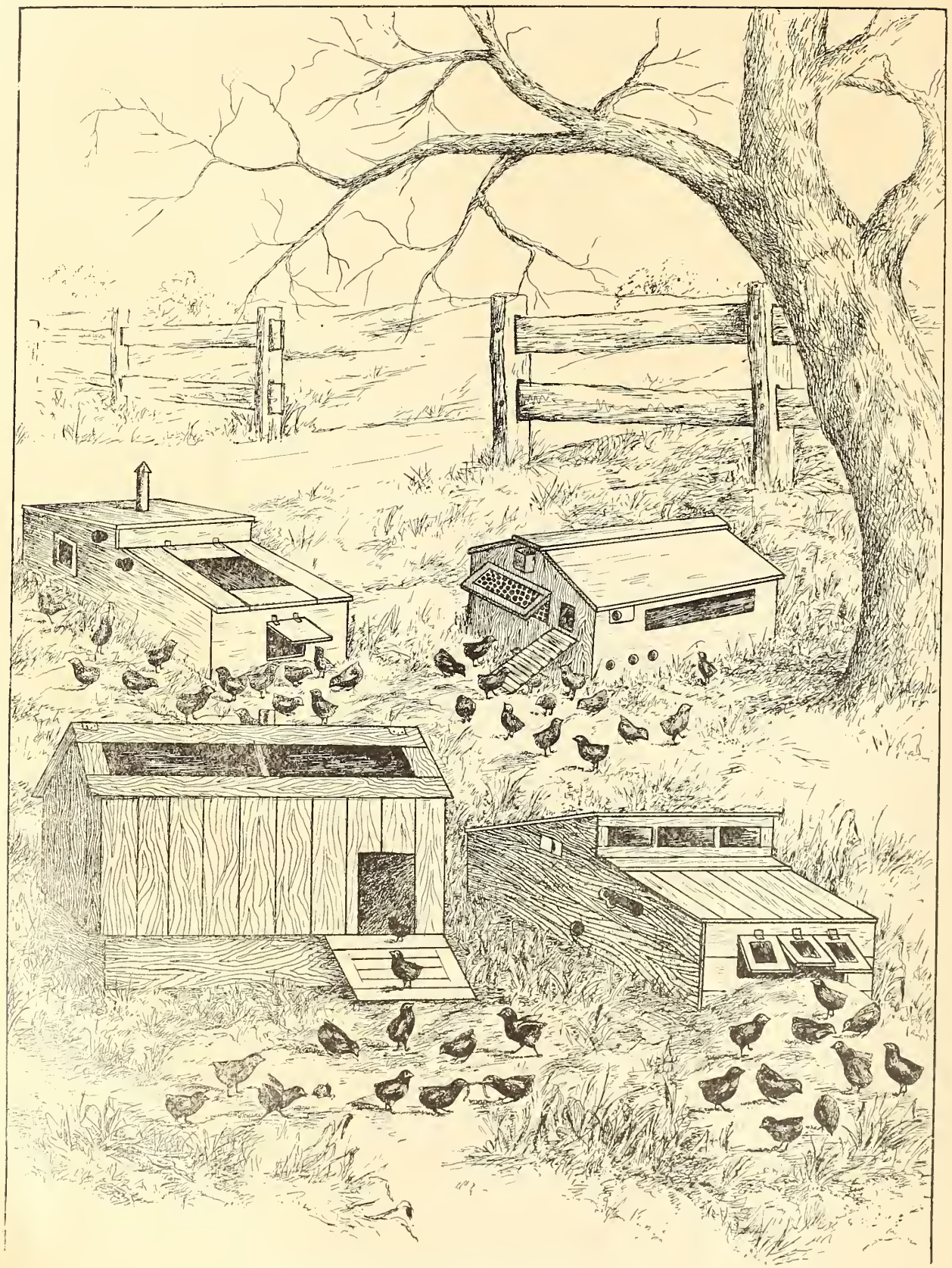
In selecting a place for setting the hens, a cool, shady spot is the best—a room in the barn or hen house where they cannot get out, where the rain and wind cannot get at them. I prefer a room to a lot, as they seem more contented when away from the sight and noise of other chickens. I arrange as many nests as the room will accommodate, leaving plenty of space for the hens to feed and take exercise. Good roomy nests of straw are made, using store boxes or half barrels turned on their sides. The latter is without doubt one of the best nests ever used for a setting, or laying hen. She is compelled to creep in and out, never flying or jumping on the eggs. She seems to feel that she is in a sheltered place, and is far more contented than in any style of nest I have used. We present on page 19 a drawing of a setting room that has given elegant satisfaction.

When a hen becomes broody I remove her from her pen or former nest in the evening to the setting room, where I have supplied the nest with a few blank eggs or china eggs, placing her carefully on the nest and leaving her for the night. She may come off at once, but I don't bother her, she will go back if inclined to set. When I see she has settled down to business, which is generally by the next evening, I remove the blank eggs and supply her with the eggs desired for hatching, dusting the nest and eggs well, also the hen, with a good lice powder. Never use any liquid lice killer for nests, as it effects the eggs, and they will not hatch so well.

As fast as I get broody hens and want to set them, I place them in this room, always supplying fresh water and feed daily. Whole corn and a box of grit is always fed, and they are supplied with a good dust bath. They come off at their leisure, feed and water, take some exercise and go back to their nests. You will notice some two or three off at one time, and occasionally they will get on the wrong nest; this will make no difference, just let them sit, unless two hens insist on using one nest, then remove one to the vacant nest and she will usually nestle down and stay there. You will find the hens do better when set in this way than any other, as they do not wander away and stay off too long, as is often the case when set out in the open. They are not disturbed by laying hens, as they would be were they left to sit in the pens, hence they hatch a much larger percentage of the fertile eggs.

I always set from two to four hens at a time, as there are advantages to be derived from so doing. First, in testing out if I find I have taken out enough clear eggs from the four hens to reset one, I do so and place all under the other three. When I take off the chicks I put them all with one or two hens, according to the number. By so doing I am saving time and hens, as the hens robbed of the chicks are penned up a few days, and then put back in their respective yards to go to laying again.

I never set a hen twice in succession, or for six weeks as some do—four weeks at the longest, and



ARTIFICIAL OUTDOOR BROODING.

those are the ones I reset after the eighth day test, as too much confinement is detrimental to your hens. One test of eggs is all I ever make of those set under hens. Eggs set in a machine I always test twice—seventh and fifteenth days. Just before the eggs are ready to hatch I again give the hens and nests a good dusting, as by so doing you get rid of the greatest number of lice that would otherwise get on the little fellows as soon as hatched and cause so much death. A good lice powder is much cheaper than to sacrifice a nice lot of chicks. Do not be stingy, but always keep a good supply of it on hands, and you will find at the end that you are money ahead by using plenty of it. Your hens sit better and your chicks start off growing with nothing to keep them back.

I always set my hens or machines in the morning and remove the chicks the next morning after the three weeks are up. All that are not out by that time will not get out, or will not amount to much should they hatch. I have had cases where the hens did not sit close the first day that the chicks hatched late, and came out strong and all right, but this was due to the fact that the incubating did not start until late, hence they hatched late.

I will add that there is a difference in brooding incubator hatched chicks and those hatched by natural processes, and will take this up in different chapters.

BROODER CHICKS.

We remove the chicks at about 9 a. m. to a well heated brooder that has been in operation long enough to become thoroughly heated throughout, being careful to see that brooder is perfectly dry throughout, and under the hover the heat should register 90 degrees the first twenty-four hours. Here we place the chicks, being careful that they do not get chilled in the least on their journey from the machine to the brooder. We leave them there until after the noon hour, when we prepare their first meal, which consists of hard boiled egg and corn bread thoroughly pulverized, or some well known and reliable chick feed, about half and half, adding a portion of fine grit or sifted oyster shell, which is mixed in the feed. Do not overlook the grit in this first feed, no matter whether under hens or in the brooder, as the grit is of as much importance as the feed itself. This food we place just outside the hover. They will pick at it and eat a small portion, running back under the hover when they get too cool. In the evening I give them a small feed of pin head oats, or dry chick feed, not rolled oats, as I find this too pasty, swelling in their crops. The dry chick feeds that are so extensively advertised I have used to good advantage. I scatter this about the hover and leave them for the night, looking after the heat that it is regular and sufficient to keep up to the proper temperature. The next morning I find them stirring around and much more lively, gaining strength rapidly after a night's sleep. They sleep and grow and every time they come out a little larger, ready for their breakfast, which is prepared, again consisting of the egg, bread and grit. At noon another feed of the pin head oats or dry feed. At night I feed finely cracked corn or coarse meal (yellow preferred). There seems to be more strength in the yellow meal than in the white, and for this reason I use it, and I find this to be one of the best of feeds and never have suffered from the loss of chicks by following the routine above outlined.

From now on they get this same feed, but four times a day after the second day for the first week, however, only feed the egg in the morning, the oat meal and corn meal being fed alternately. The dry chick feed can now be used to good advantage.

I give them a fount of water the morning of the second day, and from now on fresh, clean water is kept constantly before them. Pure fresh water is fattening and healthy, and should always be given in a clean, sweet vessel.

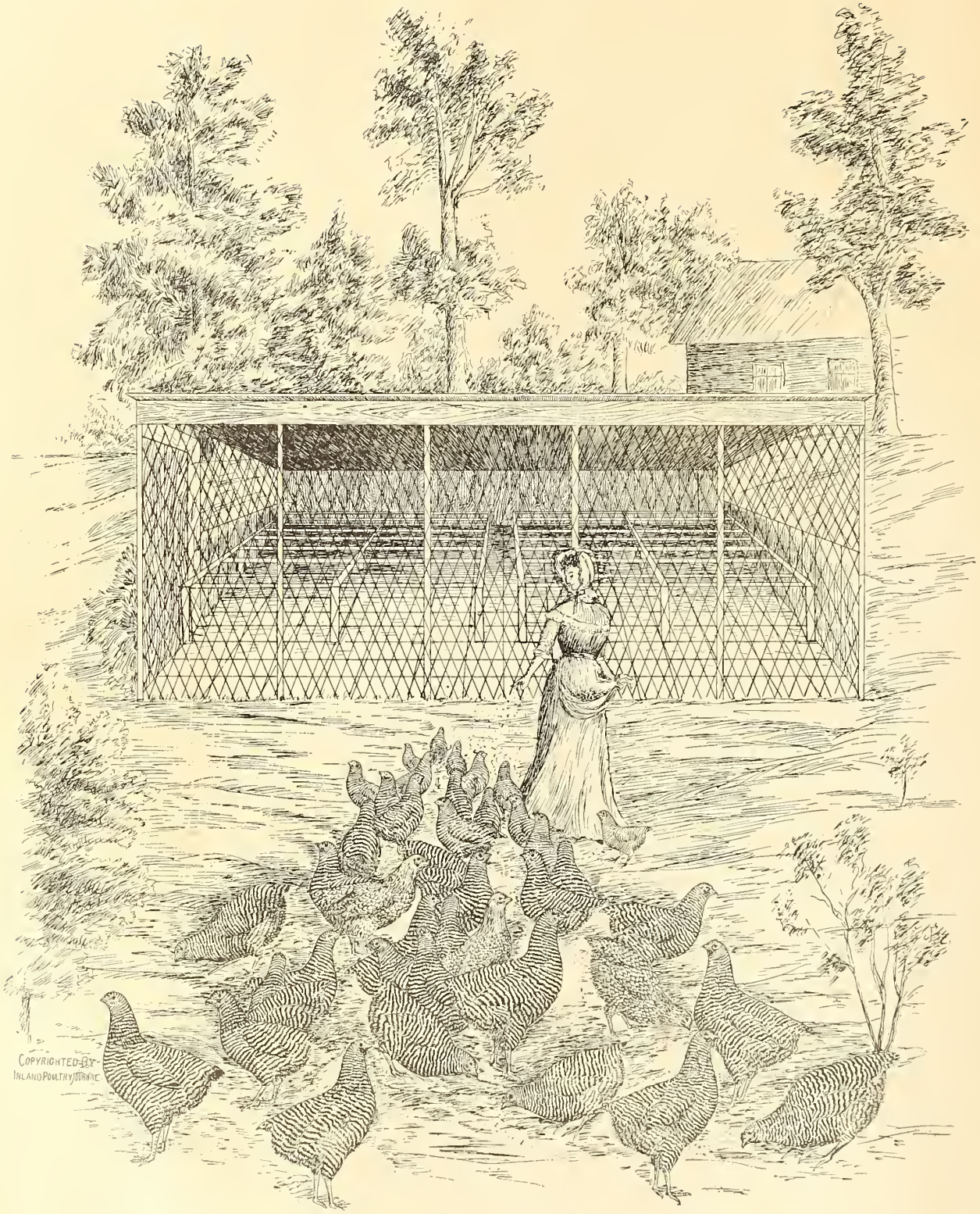
The third day I feed the grain feed in a litter of cut clover in the runway of the brooder. This begins the scratching process, which they learn in a very short time, and I will say that when they get to earning their meals in this manner the greatest of the trouble is over, for I have never yet seen an over-fed chick where they have to work for what they get. By the time the little fellows have found sufficient to satisfy their appetites, they are tired and run under the nursery hover for a nap, which is essential to their growth. With their growth comes additional heat from their own bodies, and the temperature in brooder is allowed to drop to from 70 to 80 degrees under hover.

I begin now to feed a little green feed, cabbage, lettuce or anything green and tender. I use lettuce mostly, as I find it easy to grow in early spring, and always have it fresh. This is relished very much by the chicks, and is very beneficial. The brooder should always be kept clean, removing the droppings as often as necessary to attain this end. The first week you will not need to clean out the brooder more than twice, but later on daily or every other day.

THE HEN AND CHICKS.

I remove the chicks from the nest in a basket. The hen is given another good dusting with the lice powder and placed in the brood coop. (See illustration of coop, page 15) giving her a supply of fresh water, after which the chicks are placed with her, giving her as many as she can take care of, which depends on the weather and the disposition of the hen. I have had hens take care of twenty, and do it better than another would with only ten.

I leave them until after the dinner hour, when they are given a small feed of egg and bread, the same as brooder chicks. At night I feed them the coarse yellow cornmeal, or the dry chick feed, and from now on for the first week they get the same feed as the brooder chicks, but only three times a day. The hen is kept con-



AN IDEAL SUMMER BROODING HOUSE--BARRED ROCK CHICKS IN THE FOREGROUND.

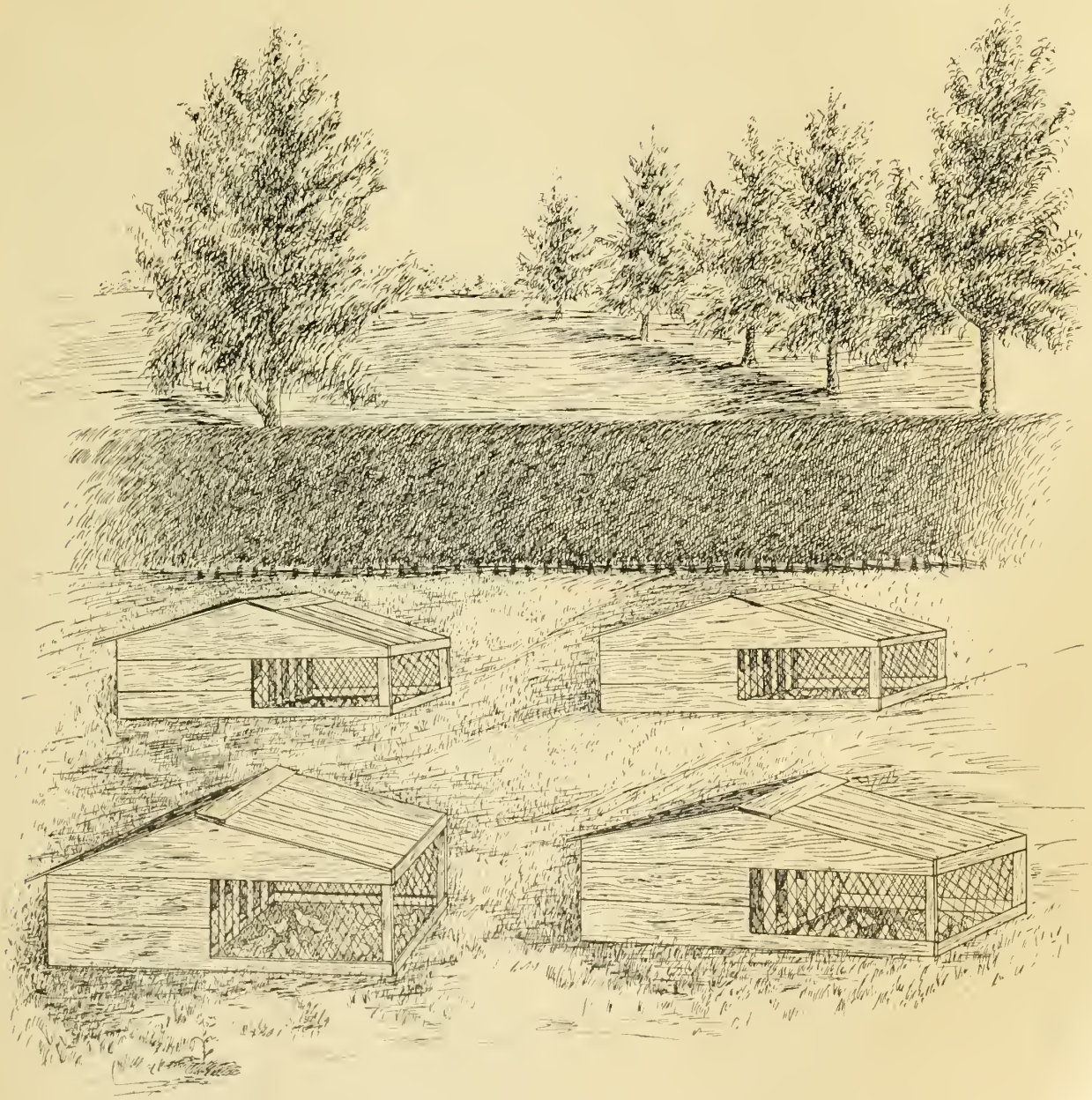
fined to the coop the first week, the chicks being allowed the run. (See article on brood coop for hens.) I move the coop around every few days, which gives the chicks a supply of fresh green grass, and dispenses with the supply of green food, as in brooder chicks.

AFTER THE FIRST WEEK.

The afore mentioned routine of feeding is kept up for the first week, diligent watch being preserved that the chicks do not get chilled, go hungry or are over fed. These points kept in mind will insure that you will never have dumpy chicks. Over-heating or severe chilling will nearly always prove fatal.

I now discontinue the egg feed and substitute granulated bone and millet seed, or the dry chick feed, scattering it in the litter. The chicks should be allowed exercise on the ground every day after they are three or four days old, if weather permits, as this out-of-door exercise develops healthy, big boned chicks. The hen is now turned out and allowed the run of the place, where she is busy teaching her brood how to earn their own living, or a part of it. Chicks allowed the range of the farm develop and grow much faster.

After they are two weeks old I take up a regular system of feeding as follows: In the morning I feed whole wheat or oats, half and half. At noon cracked



OUTDOOR BROODING WITH HENS AND BROOD COOPS.

corn (yellow preferred.) At night a mash consisting of the following:

100 pounds of bran and shorts.

100 pounds corn and oats ground together, half each.

1 1-2 pounds of salt.

A feed of this is moistened with warm water, being careful not to make it sloppy, but just wet enough to mix well and soften the food. Every other day I add a portion of beef meal or beef scraps, a pint to every twenty-five chicks. This mash is much relished, and is a food that has the muscle and bone producing elements. I find this meat mash preferable to green bone for young chicks, as it does not effect the bowels as does the green bone. I am a great believer in green bone, but not for young chicks, as their stomach is too weak to properly digest it. They thrive and do well on the beef scraps.

When the chicks are four weeks old I begin adding clover heads and leaves or cut clover to their mash, beginning with a very little and increasing gradually until I use a gallon of cut clover to a gallon of the mash food. By beginning with a small amount they learn to eat it better, and gradually increasing to one-half, you have a food that will bring them along in fine shape, as clover is one of the best of green feeds, and there is no danger of feeding too much of it.

Now a word as to whole oats in the hull. You may call me demented or say I do not know how to feed chicks, but just try this and see how your chicks thrive. There is no better growing feed for chicks than whole oats, after they are old enough to thoroughly digest their feed. It has been my experience that it is the greatest muscle and bone producing feed of all the cereals. Always the grain feed is scattered in a litter or where the chicks will have to scratch for it, and you will find them here always busy.

This system of feeding is kept up until say eight weeks before show season, which has brought your flock of youngsters up to the point where you love to see them, and want to show the other fellow how much better your birds are than his. If carried out, this system of feeding will warrant you for all the trouble you have gone to.

It is, of course, understood that you start with the right kind of breeding stock, the best you can get, for you cannot make a prize winner out of a poor specimen no more than you could develop a Wyandotte from a Cochin. The feed will not make the breed, but one thing it will do, if you start right, the feed and care will add greatly to the quality of the specimen. The little things around the poultry yard are what we want to look after. Don't neglect your birds, and your reward will be assured when they grow to maturity.

ROOSTING HOUSES.

The system of feeding explained, I have found the most profitable in growing young chicks, both artificially and with hens, and the methods adopted are practiced up to the age of ten weeks. Then other arrangements must be made, as regards their quarters. By this time the hen will have weaned her flock, and the brooder chicks outgrown their quarters. The nights will be quite warm, and you will notice the largest of the chicks will fly up on top of coop or brooder, and insist on roosting there. Now is the time to transfer them to other quarters.

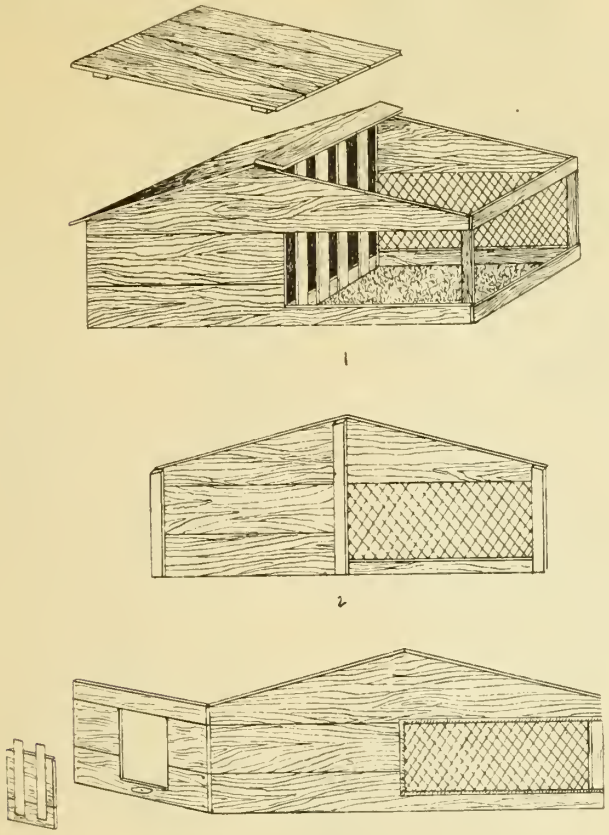
In a large roomy yard, well sheltered from the north by a track of rising ground I have built one of the best roosting houses that I have ever been privileged to see. It faces south, has a tight wall on the north, and the two ends are boarded up three feet. The front and tops of ends are covered with one inch mesh wire netting. The building is eight feet high in front and four feet in rear. The only lumber used is 2x4 scantling for sills and rafters, and 12 inch barn siding for tops, backs and ends. There is one layer of three ply rope roofing over the top of the house. The floor is concrete. The dimensions of the house are 10x24. There is only one door and that is in the west. The perches are supported on ordinary carpenter horses, and nothing fastened down. Everything can be taken out of doors for cleaning. This house will accommodate two hundred and fifty chicks from weaning time until it becomes necessary to divide the sexes, and for health and comfort and perfect safety I have, as above stated, never seen anything to equal it. At night the chicks are placed on the perches, being careful to place a good layer of straw on the floor, as a few of them will fall off the perch the first night or two. However, they will soon find their places, and two or three nights will be sufficient to show them their home. The brooders and small coops are thoroughly cleaned and put away for another season as soon as the chicks are removed. The ground where the brooders have been is all plowed up and sown down rye. In this way the soil is not only purified and enriched, but a lot of the very best green food is produced for late fall and early spring use, as rye may be eaten down to the ground twenty times and grow up again each time, producing the very best of food for old and young stock.

A house, as represented on page 12, has so many good features about it and can be constructed so cheaply that poultrymen who are in the business on anything like a moderate scale cannot afford to do without them. They can be used for breeding houses after cold weather is over, and as a winter roosting house for turkeys they can't be improved on. Where one does their own work, a house like the one shown in the drawing, 10x24, can be built for $30.00, and if you have water works on your farm, they can be kept clean without any great trouble, and will last for years. In our Western States, where high winds and storms may be expected, use cedar posts instead of the 2x4 scantlings for the front. Set them 2 1-2 feet in the

ground, and you then have a house that will stand the severest kind of a wind and be safe.

It is just when one thinks there are no rats, cats or skunks on the place that he discovers his mistake, and the mistake is usually an expensive one. With a house like the one described, you are absolutely safe, and the difference in number of birds raised, not counting their improved condition, is well worth the cost for one season alone.

In the following illustration I give you one of the simplest and one of the best brood coops I have ever



BROOD COOPS.

used. It is cheap and convenient, and I have found that more chicks can be raised by the use of a coop of this kind than in any other way. The reason can readily be seen; they have a well lighted, airy run and are not exposed to the rain or hot sun rays, as the case may be, yet have plenty of fresh outside air. I keep the chicks in these coops until a week or ten days old, then they are allowed to run out with the hen. This coop is made in one piece, the run being connected as shown in cut No. 1.

In size this coop is 4 feet 4 inches by 2 feet on the outside, and is made of shoe boxes of light tongue and groove lumber, making it water proof. This I find is the best and cheapest lumber to be had, unless you have dimension stuff gotten out for the purpose.

I first make the sides, as shown in cut No. 2, length 4 feet 4 inches; height at gable point, 1 foot 10 inches, and at ends 1 foot 3 inches. These sides are supported by three upright strips, which I make from the ends of the shoe boxes, which are heavier. The ends are then gotten out and nailed on. This is the quickest way and most simple. In the back end I place a door as shown in cut No. 3, this being made without hinges, allowing the bottoms to extend up, which fit and hold the door in place; then by fitting a jam strip on the inside, which keeps the door from going inside, you will find it better than to hinge, and by placing a button at the bottom you have a convenient fastener.

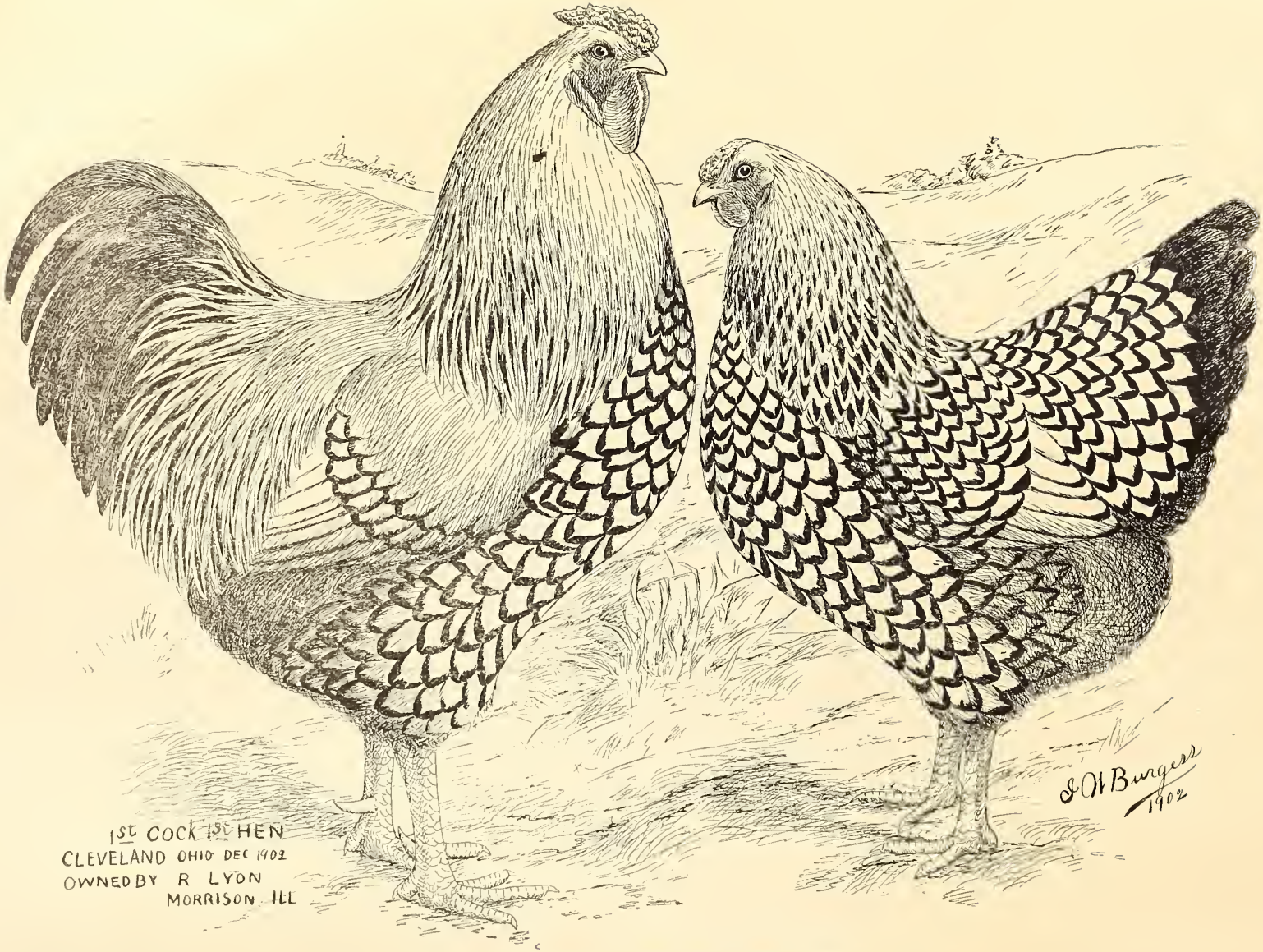
The runway sides are covered with cellar screen, tacked on the outside and the raw edges covered with a half-round molding; this keeps out rats, cats, etc., allowing the chicks sufficient room for exercise for the first week or two and in bad weather.

The brooder part of this coop is partitioned off from the runway with lath, which keeps the hen confined to this space and allows the chicks the runway as shown in cut No. 1. The top over runway can be removed, as shown in cut No. 1, and is made to fit in place and remain there by the lower bottom being fitted to the lower side of the runway, and sliding under the weather strip at the top, hence no hinges are needed.

I make a false bottom to fit in the brood part of the coop, which can be removed and cleaned with ease, and is much better than to have the chicks roost on the ground, as in wet weather your chicks are always in the dry.

As before stated, you will find this the best and cheapest brood coop ever used, there being no hardware necessary in its construction, except the nails and wire netting.

R. E. Jones.



HIGH CLASS SILVER WYANDOTTES.

DISEASES OF POULTRY.

How To Cure Them.

Most of the diseases of poultry are caused by neglect or filth. This may be disputed by many, but nevertheless it is true, as I have been very careless at times. The great advancement which has been made by scientists in the study and investigation of the cause, origin and source of disease, the discovery of the specific germs, microbes and bacteria which are constantly associated with these disorders, the fact that an animal inoculated with fluid containing the germs or microbes identified with a disease from which another animal is suffering and that the disease is reproduced in the inoculated animal, the well known contagiousness of certain diseases, and their transmission from one animal to another, either by contact, contamination of food, drinking water or the atmosphere, can only be explained by what is now a question of dispute, the presence of a specific organism, or microbe, the causation poisonous agent of that particular disease, conveyed and communicated to each other by means of the agencies just mentioned. In the light of this knowledge the "germ theory of disease" applies to the lower orders of animals as well as the human, and a proper appreciation of the means and methods of preventing the development or afterwards destroy these germs of disease is of paramount importance to the breeder of poultry, for quite often the prompt isolation of an affected bird, and thorough and vigorous disinfection of all the surroundings, will prevent a spread of the disease and save his flock from total annihilation.

There are certain agencies which produce the death of these germs, render them inert and powerless to develop disease. These are sunshine, fresh air, perfect cleanliness, the free use of certain chemical compounds, as carbolic acid and its modifications, bichloride of mercury, boiling water, etc. These agencies are what are called germicidal or germ-killing antiseptic and disinfectant. They produce the death of the germ or microbe. There are many good disinfectants on the market, and by using any one of these freely a great deal of disease may be avoided.

There are cases, however, occuring among the healthiest birds, where exposure to wet or cold will bring about an acute attack of disease, the symptoms of which are perfectly familiar, and where prompt and appropriate treatment undertaken immediately will in the majority of cases effect a perfect cure. Cases of this kind that are well understood and where the proper treatment is known are not difficult of treatment, but on the other hand quite frequently a fowl seems to be ill, and there are no positive or definite symptoms to enlighten you as to the true nature of the disorder nor any special indications for a fixed line of treatment. In these cases it is probably better to give the bird good, careful nursing, sustaining food, watching carefully the conditions, being prepared to meet any unusual emergency and trusting to natural powers of recuperation to produce a cure.

The principal diseases to which poultry are subject, and the appropriate treatment I will briefly describe.

ABORTION.

This affection must not be confounded with the laying of soft eggs, but is a severe disorder, generally due to the hen being driven violently about, or, in some cases, from eating ergot with which the grass of the run may be affected.

Symptoms.—Dropping suddenly, either perfect or soft shelled eggs and afterward moping about, languid, weak and having the general appearance of being seriously ill.

Treatment.—Place the hen in a dark pen with a nest in the corner, give moderate quantity of soft food only. Place a little bicarbonate of soda in the drinking water and keep the fowl perfectly quiet for a few days, or until completely recovered.

APOPLEXY, OR PARALYSIS.

These two affections being more or less connected, will be considered together.

Causes.—The general primary cause which induces this condition is too high feeding, and to some breeds heavy feeding of corn is very injurious on this account. The excessive quantity and rich quality of the food produces a general congestion of the blood vessels, which under any sudden excitement or violent bodily effort, may cause the bursting of a small blood vessel in the brain, the pressure from the resulting blood clot causing paralysis.

Symptoms.—There may be premonitory or warning symptoms of this trouble, which, if noticed in time, can be promptly met, and the subsequent danger oftimes averted. If a bird seems to be giddy, dazed and walks unsteady, apoplexy may be feared. In such cases, fasting and a brisk cathartic of ten grains of jalap and one grain of calomel will be of service.

If the true apoplectic attack has occurred, the bird will be unconscious and paralyzed, or if a large amount

of blood has escaped, death will be immediate or ensue shortly. Should the bird be still alive when discovered, lift up the wing and with a sharp point of a lancet or penknife, open lengthwise the vein which will be seen under, and allow the bird to bleed freely. If consciousness returns, stop the flow of the blood with some styptic, as burnt alum, dilute carbolic acid, sulphate of zinc, or pressure may be applied until the bleeding stops.

The bird must be carefully watched to keep it from pecking open the place, as such an accident might result in fatal hemorrhage.

Sometimes a bird may be paralyzed in the legs, associated with a dropping of the tail. This is generally due to a blow on the back, the most frequent cause from rushing under a low perch or entrance way. Here give the cathartic and keep the bird absolutely at rest. After the acute symptoms have subsided, strychnia in doses of one-sixteenth of a grain, twice daily, will be of service. Birds that have had apoplexy, rarely recover without detriment to the appearance, carriage or gait of the fowl.

BLACK ROT.

This is a rather uncommon complaint.

Symptoms.—Blacking of the comb; followed by swelling of the feet, accompanied by gradual progressive emaciation.

Treatment.—Is efficacious in earlier stage only; give teaspoonful of castor oil; or calomel, one grain. Feet and comb should be bathed two or three times daily with carbolized vaseline. Give warm and nourishing diet.

BRONCHITIS.

This is a comparatively uncommon disease, and is denoted by frequent coughing, as distinguished from a cold in the head only.

Treatment.—Is simple, and as a rule rapid improvement may be expected. The fowl must be removed to a dry, warm place, the drinking water should be slightly diluted with sulphuric and nitric acid, adding enough sugar to make the whole slightly sweet. A little cayenne or ginger may be added to the food.

BUMBLE FOOT.

This name is given to the affection consisting of corn or abcess at the bottom of the foot, and is more prevalent among the heavy-weight varieties than among the smaller ones.

Treatment.—If took in hand early and the foot washed several times daily in a solution of carbolic acid water and afterwards touching with lunar caustic or paint with tincture of iodine the diseased surface, a cure may be often affected. If let run on until the tumor becomes much enlarged, or where pus has formed, it becomes necessary to open the swelling and let the matter or hard cheesy substance out; after this wash out the wound twice a day with one to fifty solution of carbolic acid water, keep the bird from roosting on a perch until foot is well.

CATARRH.

This disorder is the common cold to which all fowls are subject, and is manifested by a watery discharge from eyes or nostrils, general lassitude and weakness, and if neglected may develop into roup.

Treatment.—Keep the fowl in a warm, dry place, and place five drops of tincture of aconite in half a pint of drinking water. Feed moderately on soft food, mixed warm, and seasoned with a portion of the following mixture: Licorice, 2 oz.; ginger, 2 oz.; ainseed, 1-2 oz.; pimento, 2 oz.; cayenne pepper, 1 oz., and sulphate of iron, 1 oz. Rub and mix well together. This should produce a cure within a few days. If, however, the fowl does not improve, but seems to grow worse, treat for roup, which has probably supervened.

CHOLERA.

This disease is epidemic in character, highly contagious, due to a specific microbe or germ which communicates the disease to the other fowls. The disorder is characterized by sudden thirst, excessive diarrhoeal discharges, first of a greenish color, afterward becoming white and watery, like the characteristic "rice water" discharges in the human subject.

Cause.—The active exciting cause is the verulent infectious cholera microbe or germ. The secondary or contributing causes are generally undue exposure to excessive heat of the sun without ample shade and warm drinking water. These, together with accumulation of filth and unhealthy surroundings, develop the cholera "bacillus," or "microbe," which is the primary cause of the disease. Filth breeds disease and is especially favorable soil for cholera germs, without the destruction of which the disease can not be eradicated. The disease spreads among the other fowls by the offensive droppings contaminating the grass, drinking water, etc.

Symptoms.—Sudden and violent thirst accompanied with diarrhoea, great weakness and falling about, a peculiar "anxious" look about the face.

Treatment.—This being a germ disease, the successful way of combating it is to use a disinfectant which destroys the germs and renders the atmosphere pure and sweet. Sprinkle the houses, coops and runs with "crude carbolic acid;" keep birds in cool, airy places, with plenty of fresh air and abundance of shade and cool drinking water. Give plenty of fresh, green food. The disease is very fatal, death occurring in from twelve to forty-eight hours. If discovered early enough, about seventy-five per cent. of the birds may be saved by administering every three hours rhubarb, five grains; cayenne, two grains; and laudanum, ten

drops. Also give between doses a teaspoonful of brandy diluted with a little water into which has been added two drops of carbolic acid. Five drops of carbolic acid should be added to each quart of the drinking water in order that the other birds may escape.

CROP BOUND.

The crop is distended with hard grain, afterwards swelling by the secretions, causing the outlet to be closed by the pressure.

Treatment.—Pour warm water down the throat, quietly and patiently knead the crop for an hour or more. Though it may be hard at first, it will yield after a time and become soft. When relaxed, hold the fowl with head down and work the crop, which will force the grain out of the mouth; pour more warm water down throat and repeat several times. This will force quite a little out; after which give a teaspoonful of castor oil and place the bird in a coop and give no food for twelve hours and feed sparingly for a few days in order to allow the organ to contract, or permanent distension may ensue. If these measures fail (which seldom do unless gone for quite a while without treatment) make an incision one inch long near the top of a crop, avoiding any blood vessel, and remove the contents of the crop, taking care that no hard substance is left behind; wash out well with warm water, slightly carbolized, sew up the inner membrane with fine silk thread, making three or four separate stitches. In like manner sew up the outer skin, feed on moist food and give no water for twenty-four hours.

CROP SOFT OR SWELLED.

The contents are soft or fluid. The disorder being due to a lack of tone of the inner coats, resulting in inability to contract on the food.

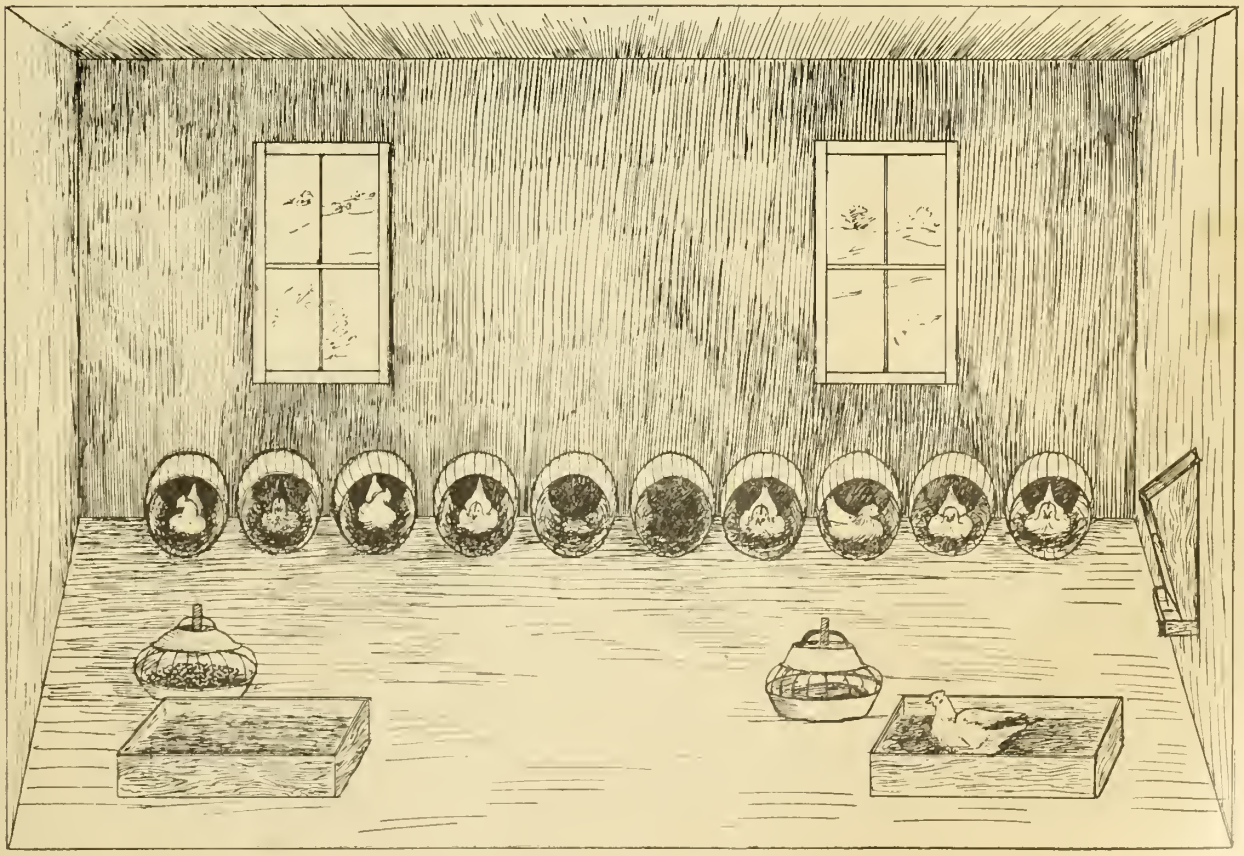
Treatment.—Place the bird alone, and give small portion of cooked food three times a day, and a small quantity of water to be given after each meal only, the water to be slightly acidulated with nitric acid. Constant care in treatment is necessary to success.

DEBILITY.

Cause.—Strain on nervous system, severe shock, excessive terror.

Symptoms.—Drooping with no apparent disease, lack of tone, prostration.

Treatment.—Judicious care, nourishing food, put in a quiet place and treat gently so as not to get bird excited. Give a tonic for a few weeks, consisting of iron and quinine mixture.



INCUBATING WITH HENS.

DIARRHOEA.

It is a very common complaint.

Cause.—Sudden change in diet or weather.

Treatment.—In the beginning it may be checked by giving two or three meals of well boiled rice dredged with flour or powdered chalk. A diet of boiled oat meal or barley meal is very effectual.

DYSENTERY.

A contagious disease characterized by an inflammation of the lower bowels, with bloody stools and straining. It is rarely cured.

Treatment.—Complete and thorough disinfection, with a few drops of carbolic acid in drinking water. Restrict diet, give laudanum five drops, carbolic acid two drops in a teaspoonful of diluted whiskey every three hours.

EGG BOUND.

Inability to lay on account of unusual size of eggs.

Symptoms.—Hen comes off nest without laying, walks slowly around with wings hanging down, and appears in distress.

Treatment.—Give dose of castor oil and handful of groundsel. This often gives relief. If not, inject an ounce of olive oil by means of a small flexible syringe and apply a one-to-one-hundred solution of carbolic acid and water to the vent to relax the tissues. Handle the bird gently so as not to break the egg, as this would mean sure death. Sometimes the passage enclosing the egg presents externally, ruptures, and the egg passes through. In such case egg-production must be stopped by giving every four hours a pill of calomel, one grain; tartar emetic, 1-12 grain, and opium, 1-4 grain. Put the bird on soft unstimulating diet.

ELEPHANTIASIS, OR SCALY LEG.

Rough, scrofulous, unsightly scurfs on shanks, most common in Asiatic breeds.

Cause.—A small insect which collects under the scales on shanks, will be found on birds that stay about barn or manure pile mostly.

Treatment.—Can generally be cured. Place fowl upon floored run, wash feet and legs with a nail brush and apply an ointment consisting of sulphur and lard with enough kerosene to mix well. Apply daily, rubbing under scales well; also give small dose of sulphur in mash food.

FEATHER EATING.

This affection consists in devouring of each others' plumage, picking the feathers until the blood flows often. This is most common in the French and Polish breeds.

Cause.—Idleness, being confined to close quarters with nothing to keep them busy. It often occurs among exhibition birds while at the shows, and the only way to stop it in this case is to coop separately, or place a bit in the mouth made of small wire, extending from nose holes to nose holes, passing under the upper bill, which holds the mouth open sufficiently far that they cannot hold a feather, yet does not interfere with their eating.

FLEDGING.

Treatment.—Give good care to the fowl. If suffering and the weather is bad, keep up in dry place, season food with a portion of the following mixture: Peruvian bark, 2 oz.; citrate of iron, 1 oz.; gentian, 1 oz.; pimento, 2 oz., and cayenne, 1 oz. Rub and mix well together. Add tincture of Chloride of iron to the drinking water, give warm milk, which is very beneficial.

FROST BITES.

The parts generally affected are the comb, wattles and sometimes toes.

Treatment.—Rub vigorously with snow or hold in ice water and rub until frost is all out. Afterwards apply a mixture of glycerine, two parts; kerosene, one part, three times daily, and keep bird in warm place. This accident can generally be prevented by oiling the parts each morning and evening. The sure way is a good, warm house.

GAPES.

This is a disease of chickens or young fowls and consists in the wind pipe becoming infested with small, white worms, causing the chicken to strangle and gape for breath, waste away, and finally die from actual suffocation. The worm is about three-fourths of an inch in length, of a pale, reddish color, and the number in each chick varies from two to twelve. It is most always found double, a smaller worm (the male) being attached about one-fourth from the upper end. These worms develop from an egg which finds its way into the chicken's mouth, caused from eating angle worms. Take a rich soil that is damp, and you will find more gapes as they get more angle worms.

Treatment.—Swab throat with a strong solution of 1-3 kerosene, 1-3 turpentine, and 1-3 lard.

GIDDINESS.

Cause.—Generally too great blood pressure in the brain.

Symptoms.—Bird runs around in a circle, staggers about as if drunk, and loses all control of its locomotive powers.

Treatment—Brisk cathartic and spare diet or apoplexy may supervene.

INDIGESTION.

Cause.—Injudicious use of special foods, unwholesome diet.

Chief Cause.—Over-feeding, resulting in inflamed stomach, sluggish liver, or simple debility.

Symptoms.—Bird walks lazily about, with no appetite, and droppings scanty and unhealthy in color.

Treatment.—If digestive system deranged, give daily: Rhubarb, 5 grains, changed every fourth day to calomel, one grain. Restrict diet to small portion of well cooked food, twice daily. A little water may be given after meals only.

LEG WEAKNESS.

Frequent affection in cockerels of large breeds, due to outgrowing the strength of the legs, and occurs between ages of three and six months. Cause—Muscular weakness or bony deficiency.

Symptoms.—More or less squatting on the ground, instead of walking around. If the weakness is caused by a deficiency of bony matter, there is a tendency to knock knees or crooked breast bone.

Treatment.—Give bone dust in food freely, also a pill of sulphate of iron. 1 grain; strychnine sulphate, 1-30 grain; phosphate of lime, 5 grains, and quinine sulphate, 1-3 grain. Give three times daily. After a week or two give instead, half a tenspoonful of "Parrish's Chemical Food" in teaspoonful of water, morning and night.

LIVER DISEASE.

This serious disorder, which is rarely curable, may arise from neglect of any digestive trouble. Birds being penned up without grit or oyster shell, thereby causing enlargement or other abnormal conditions of the liver.

Treatment.—A grain of calomel every other day, if taken in time, is very serviceable. In severe cases a small pill about the size of a grain of pepper is the best remedy I have ever found and has rendered a complete cure. Feed as for indigestion.

PIP.

Horny appearance at end of tongue.

Cause.—May be due to obstruction of nostrils, causing bird to breath through mouth. Drying end of tongue, or if due to a real affection is analagous to foul tongue in human.

Treatment.—Give cathartic; remove any crust or scale that will come off, and wash tongue and mouth with a mild solution of carbolized water.

RHEUMATISM.

Cause.—Exposure to cold or wet, privation, deficient nourishment.

Symptoms.—Weakness of legs, stiffness of the joints, or contraction of the toes. Distinguished from "leg weakness" by the latter affecting young birds, and due to muscular weakness.

Treatment.—Put fowl in warm, dry place; give stimulating diet. In evening put in the basket by the fire. Bathe legs in warm water to which some mustard has been added. Internally give daily a pill consisting of salol, 2 grains, and opium, one-half grain. Minute doses of oil of mustard in the food is serviceable. Regularity in treatment is essential.

ROUP.

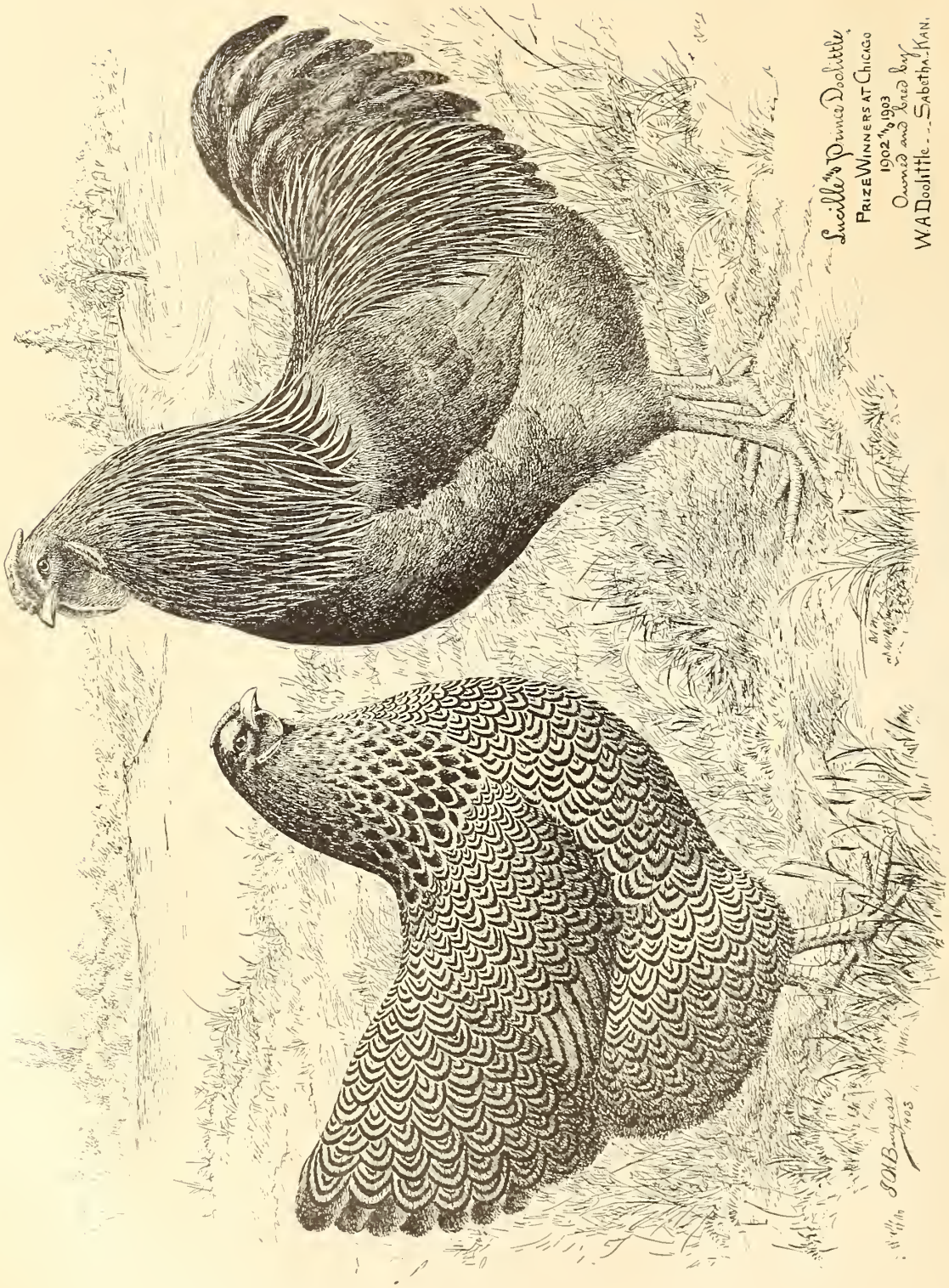
A highly contagious disease is communicated by the poison in the discharge, drinking water, food, or by actual contact.

Cause.—Dirt and filth, ill-ventilated and close houses, exposure to draughts, dampness and cold.

Symptoms.—Severe cold and catarrhal inflammation of the membrane of nostrils and mouth; thick, fetid discharge from nostrils, which may accumulate and close the eyes, forming thick, cheesy masses, which may have to be opened in order to remove contents; general feverishness wasting. This disease may be mistaken for a cold, which if neglected often passes into roup, but as long as the discharge is thin, watery and inoffensive, it is the ordinary cold.

Treatment.—This being a germ disease and highly contagious, the secret of successful treatment and prevention of the spreading of the disease lies in thorough disinfection of all the surroundings. Isolate the affected bird, taking drinking utensil away from the other fowls and disinfect with a solution of crude carbolic acid. Disinfect all the other vessels or fountains which the birds may use and add to each gallon of drinking water, one teaspoonful of Conkey's Roup Cure. Put the affected fowl in a moderately warm place, perfectly dry, with no draught, afterwards wash out mouth, nostrils, and around the eyes with carbolized water. If the discharge is excessive, take a small syringe and wash out the nostrils with warm salt water, placing point of syringe in slit in roof of mouth and turning slightly outwards for each nostril. Repeat this several times daily.

Medicinal Treatment.—Several hours after oil is given, begin with: Balsam copaiba, 1 oz.; licorice powder, 1-2 oz.; and poperine, 1 drachm. Make into six capsules or pills and give one morning and evening. On third day give a grain of calomel. If throat is effected, swab out as much secretion as possible, and with a cotton swab apply carbolized vaseline to the parts. Seclude bird until recovered. R. E. Jones.



PARTRIDGE WYANDOTTES.

PREPARING FOR EXHIBITION.

Success in the show room depends greatly on the exhibitor. First he must be a lover of his birds if he expects much out of the business. He must know a good specimen from a poor one. A good, true fancier is born, not made. If he has not a love for the business he had better "stop before he begins," for he will never make a success in raising fine poultry. Success in the business requires enough love for the birds to look after their every need, the buying of delicacies for them, while you yourself sit down to a "free lunch," the getting up in the middle of the night, should you per chance recall something forgotten, wade out in the snow shoe-top deep and attend to it. It may be a window partly left open, which left so the entire night would result in frozen birds, and perhaps your best ones. One is tempted on such occasions to go back to sleep and leave it until morning, but your love for your flock incites you to action. This is what it takes to make a chicken "crank," as we are called, and unless you have the inclination to make sacrifices for your fowls, you need not expect to succeed. Through neglect and with no natural love for the business, many failures are caused.

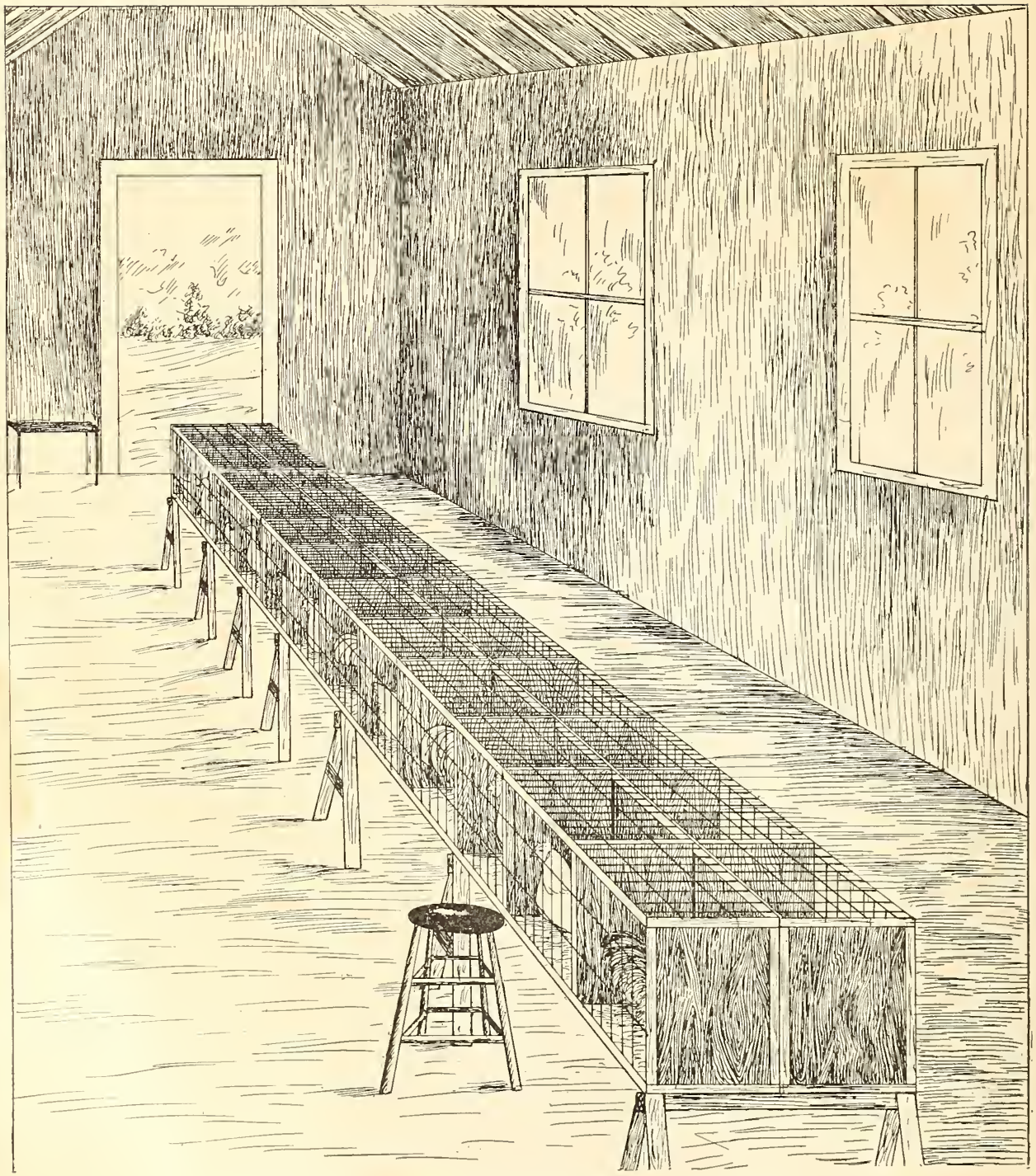
In the fall, about October, I cull my flock for the last time until there is nothing left but birds I desire for breeding and exhibition purposes. The cockerels are separated from the pullets, and placed in the cockerel pens—yards made for that purpose, large enough to accommodate the number I have and fitted with a good warm, dry house. The pullets are placed in their winter quarters, being careful not to crowd too many in a pen. I now go over and select my exhibition cockerels. This is done fully two months or ten weeks before show season. Each bird is weighed and placed in a separate conditioning coop, and for this purpose I have never found anything better than the coop shown in the illustration. They are models of comfort and cleanliness, with no possible chance for a bird to injure itself. You will note in the drawing a small stool or pedestal. I have this the same height from the floor as the bottom of coop, so that the bird when taken out for handling is never frightened about falling. When placed in this coop the weight of the cockerel is carefully marked on a card which is attached to his coop.

These coops are arranged so that no direct sunlight strikes them. The same system of feeding is kept up, but now I feed the mash at noon and whole corn at night, giving them all they will eat up clean at a feed. Each bird is weighed once a week, and the record made on the card provided. Some weeks one will gain as much as a pound, others a half, but within thirty days you should have put from a pound and a half to two pounds on a bird. Three weeks before I desire to show, any birds I find not up to weight I begin to feed a little heavier and change the feed. I place a tablespoonful of sugar to the bird in the mash. This causes them to take on fat, which can be easily gotten rid of by discontinuing the sugar. I now feed five times a day, adding a feed of corn bread soaked in milk, and another of hard boiled eggs. They will now add weight rapidly, and there will be no danger of developing too large a comb, as would be the result from feeding raw meat, the milk and egg answering the purpose of meat and not endangering the condition of the bird as would raw meat.

The pullets are placed in houses, not being allowed the outside run, and fed and weighed in like manner, placing six to eight in a pen, supplying them with clean straw as often as needed, also grit and oyster shell. It is well to remember that pullets will not do so well—not take on flesh so fast—when confined to a single pen as will the male. They will fret and worry, and at the end of a month will not weigh one ounce more than when first confined. There are exceptions to this rule, but usually the best results come from allowing several of them together.

At the time I select my show birds I go over each specimen, noticing closely if any feathers are broken. If any are found they are pulled out, as they have ample time to grow in again. No stubs on shanks or down between the toes must appear, as many a good specimen has been "thrown out" in the show room for this disqualification, and from among the stock of old breeders too. You will occasionally find this defect among all the breeds, the old time Barred Rocks and Brown Leghorns' even throw down between the toes and stubs on the shanks. Therefore do not be conceited and think your birds are so much better than others, but look them over carefully and kill any bird you find with these defects.

Your birds should be handled, groomed and petted each day. Teach them to pose for you. They must not be afraid of their attendant, for if you once get a bird afraid of you or abuse it, it will never fully have confidence in you again. Have them bold and not afraid to be handled, so they will stand erect when posed to do so, to show their carriage well. Here is where you find "typical carriage" of much value. Take a specimen that has been roughly handled and abused, every time you go around his coop he crouches down in a dark corner, with tail down and feathers all ruffled up, and you are sadly reminded why this section was placed on the score card. I always treat my birds with as much kindness as possible, and find that it is much appreciated by them, and that I am fully repaid for my trouble in the show room. A carefully groomed bird shows to the greatest advantage and will get all that is coming to them when the judge passes on the class, while the bird that has not been petted and



PREPARATION ROOM FOR EXHIBITION STOCK.

handled will not show their good qualities and strong points in shape and lose much thereby. I again call attention to the pedestal in the drawing, showing the preparation room (a small table would serve the purpose just as well), which should be set perfectly solid on the floor so that there is no shaky movement when the bird steps out on it. After the birds have become used to their new quarters, about twice each day place the pedestal in front of cage, open the door and coax the bird out by talking to it and offering feed in your hand. When you place your hand in the cage, put it under them rather than over, and in petting one, always keep your hand below the eyes. They do not like to be rubbed on the back or tail, and it is only after they are perfectly gentle that they will allow it. First place the fingers under the throat, gently rubbing upwards; after the bird gets used to this, place your hand well down between the legs and draw it up the reverse of way the feathers lay. If bird seems uneasy, gently repeat the rubbing of the throat again and again until you have your bird sufficiently tame to allow of more thorough handling, then pose him in different positions until you feel you have found the one best suited to him, and in the future only pose him in that one position. At first you will have some difficulty in getting him to stand as you desire, but gradually he will pose for you all right. Just as soon as you get him to stand in correct position study to keep him there. Move back a step or two from the cage with uplifted hand and finger pointing direct at the bird, move up and rub him under the throat, repeating the operation, and in a comparatively short time you will find you can pose a bird and go back thirty yards, and have him stand in position for a full minute and never move. Always use the same tone of voice; always assume the same position when training, and above all things keep your temper if you expect to succeed. Should bird fly down, back him up in some corner and talk to him all the time until you have him in your hands again. Do not run after him but use this gentler method, and you will soon gain his confidence. There is some work about this, but it is the only system of teaching the birds to pose as he should. THEO. HEWES.

BARRED PLYMOUTH ROCKS.

IN THE EXHIBITION HALL.

Only the old experienced breeder realizes what effect certain lights and colors have on different birds in an exhibition room. While we have no desire to give to a would-be exhibitor the idea that only the older breeder is capable of cooping his birds in the right way for best effect, it is a fact that a careful study of background and surroundings have not only made additional sales, but has assisted very materially in winning prizes for many an exhibitor. It is true the exhibitors as a rule have nothing to do with the position of their birds in a large show, simply being assigned a certain coop in a certain place and compelled to take that space, but you are allowed the privilege of decorating the interior and sometimes exterior if your coops as you see fit, and it is this decoration that we wish to call your attention to.

Take for an illustration a long string of white fowls, no matter what the variety, coop them all alike in our modern and up-to-date cages. Select three or four coops, no matter from which part of the exhibit you make this selection, but be careful that the light falls the same on them as the ones on either side. Put in a back ground and line the two sides of the coop with blue, a piece of cambric will answer the purpose, and you will be surprised to note the difference in the effect on the birds. Every one of them will stand out in bold relief, and their own white plumage will be enhanced by the blue contrast. Other colors can be studied with the same results. This not only assists the exhibitor, but adds to the exhibit by making the show interesting and attractive. If for no other reason than the displaying of the birds to one's own satisfaction it is worth the expense. We remember well an exhibit of Buff Cochins at Los Angeles, California, some years ago. The owner was quite well-to-do, and was breeding more for fancy than profit, and thought nothing was too good for his pets. There was at least one hundred dollars worth of roses tastefully arranged in and around this display; in fact, the entire exhibit was one big floral wreath. While we would not advocate such extensive decoration as this, there is no doubt the exhibit referred to had more to do with the gate receipts at this exhibition than any other one exhibit in the building, as it not only attracted the attention of visitors, but it was commented on by the daily papers in a way that called special attention to the show.

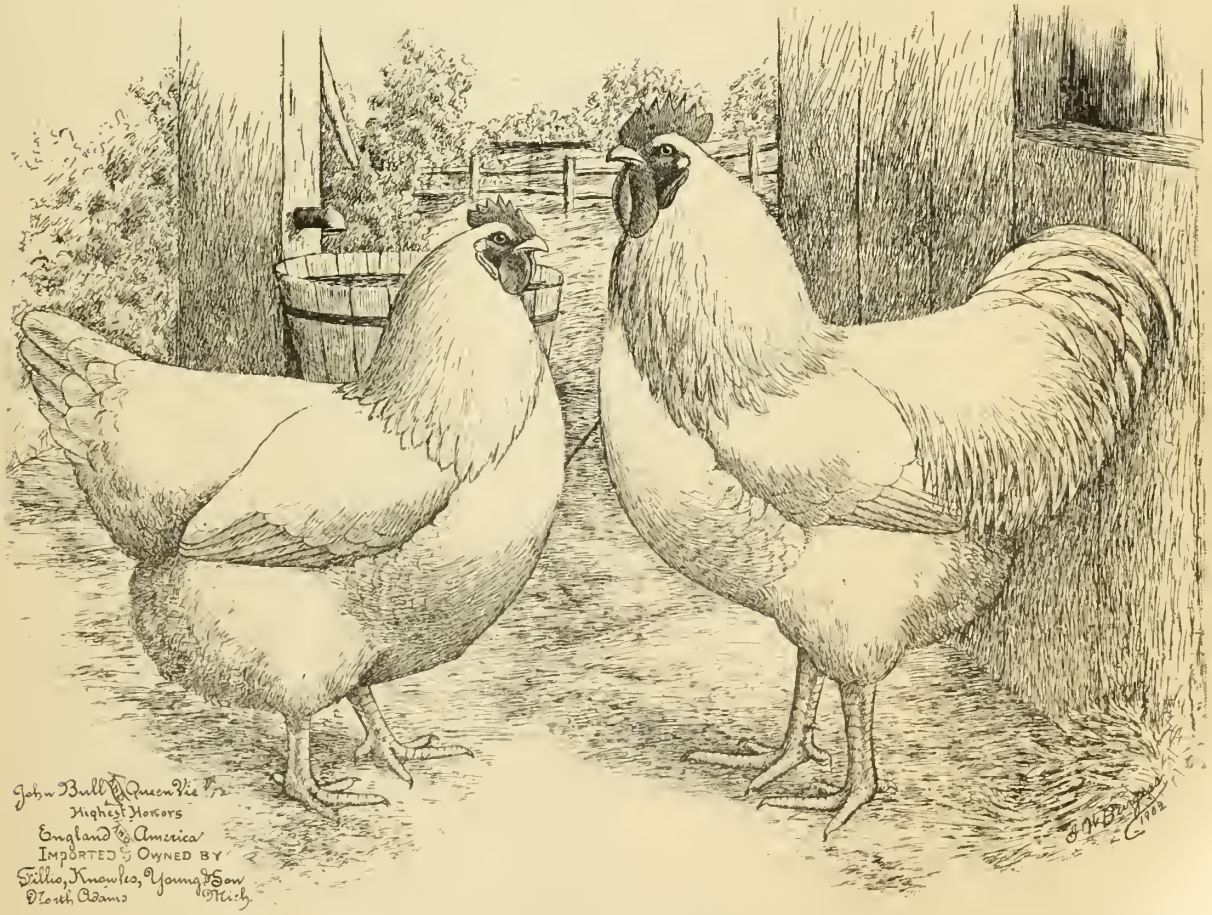
If our Barred Rock breeders will look at their flock when the sky is overcast or in early twilight, taking up your position between your birds and the sun, then again under a bright sunlight, they will hardly recognize them as the same flock. Nothing adds more to the beauty of this variety than an overcast or leaden sky, and nothing so magnifies their defects as the bright sunlight. Other varieties are improved by artificial lights. We call to mind an exhibit of Partridge Cochins that were shown in Kansas City several years ago. They were unusually good in color, especially the females. It was one of the first really fancy shows of the Partridge Cochins that had ever been exhibited in the west, and they attracted an unusual amount of attention. Having an exhibit in that part of the hall, I studied these birds pretty carefully and noticed that at a certain time every afternoon the good color was magnified. At this time the light seemed to soften, and a sort of a rose tint would bring out all the good and cover up the bad. This effect was so marked that I began to look for the cause and found it. In the gallery of the building just west of where the exhibit was located was a number of windows composed of three different colored glass. This glass was cut in small squares and arranged in the form of a star and crescent. At the time of day the birds looked their best, the sunlight was streaming in through these tri-colored windows, and it was the shading caused by the three-colored light effect that made the birds show to such wonderful advantage. The magnified color would last so long as the sun's rays shown through and directly on the exhibit, but the moment it passed, the true color that nature had given them returned.

Another illustration of magnified color that came under my notice was at an exhibition given in the old exposition building on the lake front in Chicago. This was at the time when poultry was exhibited in connection with fat stock, and from 1885 to 1891 there were some of the best exhibitions of poultry given there that could be found anywhere in America. The poultry was always exhibited in the gallery. There was a small speed ring in the center of the building, and at either end was arranged a lot of stalls for cattle and horses and other fine stock that might be exhibited. In order to show this stock to good advantage to those in the galleries, there was a circuit of arc lights arranged directly over the stalls and a little below the level of the gallery floor. The usual custom in cooping the poultry was to place them in one row, leaving a wide passage way next the gallery railing, but on this particular occasion there was an enormous exhibit of Dark Brahmas, one exhibitor showing over sixty birds, and the space assigned was not sufficient to accommodate all, so that a row of coops containing perhaps twenty females was placed along side of the gallery railing, bringing the exhibit directly between the spectators and the arc lights. How well I remember the first night I attended the show! Never in my life have I seen such elegant color; there was that beautiful steel gray penciling, without a trace of mahogany in it! I seemed perfectly paralyzed, and could scarcely leave the exhibit, and when I did so it was only to come again to look at them. I thought of them that night at my hotel, and the first thing I did the next morning was to go directly to see the wonderful Dark Brahmas. They were wonderful indeed, for in place of the perfect steel gray color that I had seen the night before, I found a very ordinary display of Dark Brahmas. They had

the usual amount of red in their plumage, and were just such birds as I had scored ninety or less points many a time. Again I investigated and found that by having the birds placed between the arc light and yourself, the brilliancy of the light magnified the good to such an extent that the bad was lost sight of.

I might give any number of such illustrations, but believe the foregoing will be sufficient to impress upon the minds of my readers the importance of this matter. You can't be too careful in your selection of your varieties or the colors that show them off to the best advantage. And in this connection it is well to bear in mind the judges looking at the same variety in different parts of a building, and under, perhaps, ten different shades of light, is not entirely to blame when poor colored specimen sometimes wins a prize. While it is generally thought that black and white are easy to understand, and all judges should agree in regard to them, it is a notorious fact that white is one of the hardest colors of all to judge accurately; in fact, white alone is the most deceptive of all colors, and only by comparison can one judge it correctly. Then again, there is no color that is so effected by lights as white. In fact, so radical is this effect that judges often carry a white bird to the sunlight in order to satisfy themselves that the light on the inside of the building has not played them false. We have had exhibitors complain of a cut of one-half on color, claiming the section was perfect, and it was impossible to convince them to the contrary, until, by actual comparison, they were shown that their birds were really defective in color.

If some of the breeders of black fowls who are positive their birds are in reality black, will go in the woods and kill a crow and compare the color of their fowls to the color on the crow, they will then have an object lesson that will teach them more about solid colors than they ever learned before. The crow is absolutely black; for centuries this color has been bred in them until they stand today a model of perfect color, and until we can produce as good in our domestic fowls, then we can not honestly claim perfect color for our black fowls. THEO. HEWES.



WHITE ORPINGTONS.

GROOMING FOR THE SHOW ROOM.

I hesitate here a little, as some people have so fine a sense of honor and so delicate a conscince that when it comes to washing or dressing a bird up for show, they call it dishonest and say they do not think it right to add to their appearance, and make them look much better than they do when they are at home in the yards. While I have no desire to see dishonesty practiced in the show room, I am a firm believer in showing stock of any kind in its very best possible condition, both as to health and cleanliness, and I should not hesitate to remove any broken or soiled feathers I find in a specimen I was preparing for exhibition. Should a bird be seriously disqualified I should certainly throw him out, but minor defects, such as a slight flecking in plumage of a white bird, I believe should be removed. They are no serious defects, and every one that breeds these varieties know they will show in some of our best specimens. There is a loud "howl" goes up ever so often from some one who is over anxious to show the world how honest he is, but it has been practiced until it has become a custom, and so long as it adds to the beauty of an exhibit, I prefer to see it that way. We all have a natural pride in our own looks, and try to dress as well as our means will allow, and make it a point to dress a little better in company than we do at home alone, so why not show our birds to their best advantage?

I will give you an idea of some of the toilet articles used in dressing a bird for the show room. First I wash his feet and legs clean, also his face, comb and wattles, being careful that there is no dirt left under the big scales on his feet. I then go over the shanks with a solution of sweet oil and alcohol, half and half. This brings out the bright yellow color, or whatever color may be natural to the breed. In cases where the color is not as strong as it should be, in yellow colored shanks, I use a mixture of vasoline. In cases where the shanks and feet are inclined to be a little rough, as is sometimes found in cocks and hens, I use a filler which I make by melting bees wax and thinning it down with sweet oil until it becomes like a thick salve. This applied to the shanks and feet fills up the rough places and softens the surface, and adds wonderfully to the appearance. I then bathe the face, comb and wattles with the sweet oil and alcohol mixture, which brings the blood to the surface and reddens them up, giving them a handsome and healthy appearance. You now have the birds looking at their best, and if they have been kept in clean quarters and fed up to weight, will make you an exhibit you need not be ashamed of.

In parti-colored birds I never wash the specimen, for with the proper care they will clean themselves up much better than you could do it. R. E. Jones.

WASHING WHITE FOWLS.

In exhibiting white fowls, one of the most important points is to have them in proper condition. A fine specimen in poor condition often gets severe cuts in sections that otherwise would be passed as perfect; then the judge is blamed and pronounced as "knowing nothing," when really the bird should have been cut, in many cases, heavier than it was, for if there is anything in the show room that is an eye sore and makes a bad showing, it is a coop of dirty, non-conditioned white birds.

I will say to begin with that if you think it is too much trouble to go through with this long grooming process I am about to describe, it will be well to keep your birds at home than to risk their winning in the show room, as there will always be some fancier not afraid of a hard job, and who will sit up nearly all night seeing that his birds are drying out right, and that the fires are kept up, with a string of clean, snow white birds, properly cooped and ready for the judge, and you will at once concede the ribbons to him, and go home much wiser, and with a determination to win next time, when the winning may be had at the expense of a little time and trouble. The other exhibitors may not have had any better shaped or color birds than yours, but they showed to a better advantage because of his effort to put them in condition.

I select the birds I desire to show and place them in coops, when they are removed to the wash house, which is a warm room, the same as a living room. The kitchen is a desirable place when no other convenience is at your command, and I will add that I have washed and dried many birds for exhibition purposes by the kitchen stove. Any warm room will do where you have access to plenty of warm water. I use soft water for the bath and hard water for the rinse. Three tubs are prepared. The first is filled with warm water—warm enough to cut the dirt and not be uncomfortable to the fowls. The bird is placed in the water and thoroughly immersed before the washing proper is begun then I give it a good hard rubbing, using a good white soap which will lather freely. It takes two persons to do this work, one to hold the bird while the other washes, and then you get a free face bath occasionally; but by careful, gentle handling the bird will soon get quiet. Old birds that have been frequently washed, seem to understand what is coming, and to enjoy the bath, never making a move and showing by their actions that they were not averse to the handling. I always wash across the feathers, rubbing rather hard, and using plenty of soap. The wing and tail feathers I rub between my hands, and draw through as I rub. This cleans them well and does not permit of the breaking of the feathers. I never rub the reverse of the feathers, while it is a hard matter to break them while wet, yet a few are broken and they are left in bad shape. After the bird is thoroughly clean, it is placed in the second tub, which is about half full of clear, warm water, but not as warm as the bath. Here I rinse thoroughly, being careful to get all the soap out of the feathers, after which I place it in the third tub.

which has also been filled about half full, but not so warm—just the chill taken off—and in this water I place enough blueing to tint the water a rich blue, but not enough to spot the fowls. The bird is given a dip in this, head and all, is pulled around backward a time or two, then removed and the water all squeezed out of the feathers. The bird can be taken by the legs and given a toss up in the air a few times, when it will flop as it comes down, leaving the feathers in good shape for drying. It is now placed in a clean coop with a thick bedding of clean wheat or rye straw, not oat straw, as oat straw will fade off yellow on the birds and stubbornly refused to be washed from the plumage. A warm fire is kept up to dry them, the coops being placed close around the stove to keep them warm. After they are dry about the back and body, the straw is removed and a clean dry bedding of the same material supplied. It takes from twelve to fifteen hours to dry thoroughly. In drying should you want to make your birds soft and fluffy after a bath, take small wads of dry paper, about as large as a marble and work them up under the feathers, so that in drying they will stand out prominently. You will be surprised to note the difference this will make in the appearance of the birds.

This washing is always done two or three days before starting for a show, giving the birds ample time to straighten out their feathers properly and to dry thoroughly, being careful to keep their bedding perfectly clean. After they are dry and ready to coop for shipment, give them a good dusting of pulverized corn starch, using a baking powder box which has been converted into a pepper box for the purpose.

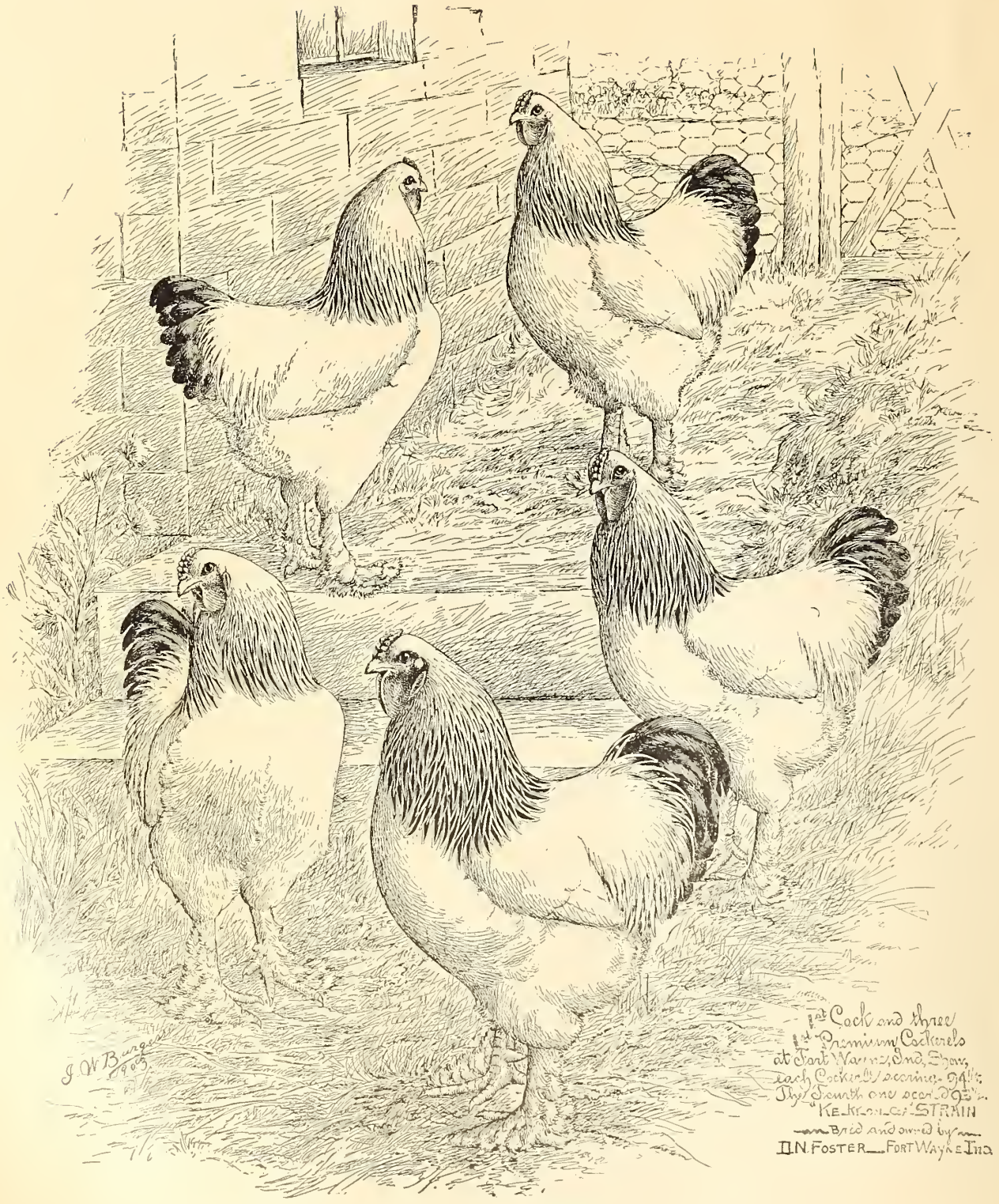
If the weather is very cold and you are afraid to wash them, I would recommend the dry corn starch process, which is as follows: Take one of the large packages of corn starch, listed as six pound boxes, place it on a board, and by use of a rolling pin pulverize it to a powder. Protect your clothes with an apron of ample proportions, place your chair near the table on which you have the corn starch, take a bird in your lap, holding it between your legs, with its head towards you, and work the corn starch into its feathers, always rubbing the right way of the feathers, never against them. Kneed the starch in thoroughly until it seems soiled, then take your bird to the open air, and by gently lifting it from its feet, let its body drop so that it will flap its wings to prevent falling. By doing this a few times the soiled starch is gotten rid of, and by a few applications of clean starch the bird is reasonably clean. This is not so good, however, as the bath, and is only recommended when the weather is too severe for bathing.

In either case they are left for awhile to shake their feathers, then their combs and legs are gone over with the sweet oil and alcohol. If you never saw a pretty contrast of colors, you see it now—a beauty to behold, body like a snow bank, face and comb a rich bright red, shanks like gold! You look over the lot, and the one you picked out in the yard as your best bird seems to have a number of close seconds; in fact, you have to look twice to see which is the one. The judge, also, when he meets a class like this, has some hard work on hands to tell just which one is the best in the lot.

I have found white birds that did not need washing before taking them to a show, but their numbers are few, and the exceptions were mostly males that had moulted out quickly, were in their new plumage and had been kept up on a clean run of straw. Even these need to have a thorough dusting with the corn starch and a brightening up of face and shanks.

To some it may seem that this washing process is dangerous and that good specimens woud be lost from colds and roup. In my several years of washing and exhibiting white birds, I have my first bird to lose from this cause. There is no danger at all if followed up as laid before you, and I will just add that you will not have to dust for any lice on these birds, as the bathing leaves them as free from lice as is the unhatched chick. I have given you the exact process as used by myself, with all of the secrets of this part of the conditioning, and if you think there is nothing in it, just try exhibiting without following this method, and then note the difference in your exhibit the next time you have gone to this trouble. It takes hours of patient, hard work, but what is this compared to a showing that will not only do credit to itself, but will add to your good as a breeder—an advertisement in itself! There is "nothing succeeds like success," and success depends on what you do to succeed.

R. E. Jones.

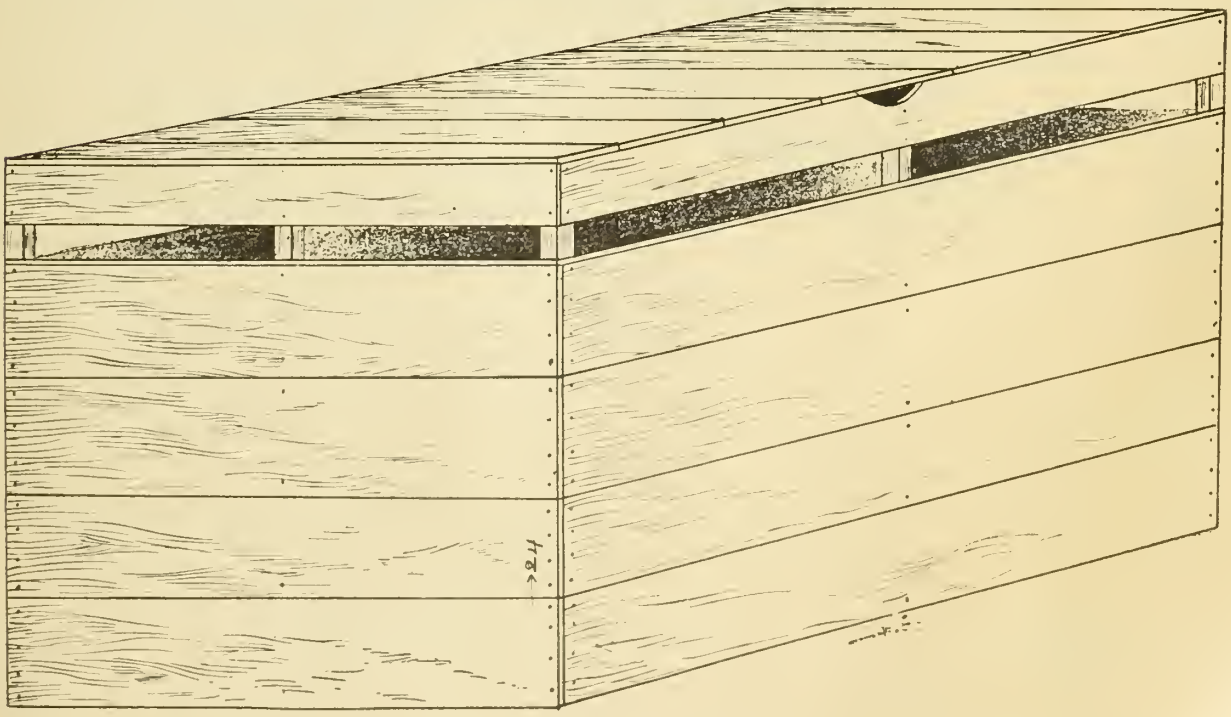


LIGHT BRAHMAS.

COOPING AND SHIPPING SHOW BIRDS.

One of the most particular points in showing birds, is, as I have said before, to get them in good condition, and then after you have them in the proper shape keep them that way. In doing this you must be careful at all times not to break the feathers, not to coop too many together, and above all things do not put strange birds together. When you do have more than one female in a coop see that they are birds which have been running together, for the most wicked fight that happens is often between two females, and many a show bird has been ruined in this way.

In shipping birds to an exhibition where coops are furnished by the association, use only your lightest crates; be sure they are strong and warm enough to protect your birds, but remember that every pound of extra weight is being charged up to you at double first-class rates by the express company, with no gain to yourself. Do not crowd your birds, but at the same time see that they do not have one inch more space in the small shipping crate than is needed, as you will find they reach their destination in far better shape than where too much space is allowed. Our own experience has taught us that it is best to ship one bird in a crate. It adds a little to the cost of shipping coops and express, but it more than makes up in the condition and appearance of your birds while on exhibition, which is everything from an exhibitor's standpoint. In ordering coops it is well to have several sizes and especially have one size for males and another for females, as there is a useless lot of space and extra weight added when the large coops are used for females. In cooping males we use a coop that is high enough for the bird to stand erect without touching either comb or tail. The height of this coop will depend somewhat on the breed, but for the American and Asiatic classes we would recommend a height of from twenty-four to tweny-six inches, reducing in proportion for the smaller breeds. In width the coop should be comfortable, but not wide enough for the bird to turn around. Be careful as to length; see to it that the bird can stand without being crowded or his tail will be ruined. Better be too long than too short, as a little surplus space here will do no harm. On every coop used for shipping birds to exhibitions you should have a card bearing your name and address, with blank space filled in giving full information of what the coop contains. We print here an outline of a card which can be used with every assurance that



COMPARTMENT SHIPPING COOP.

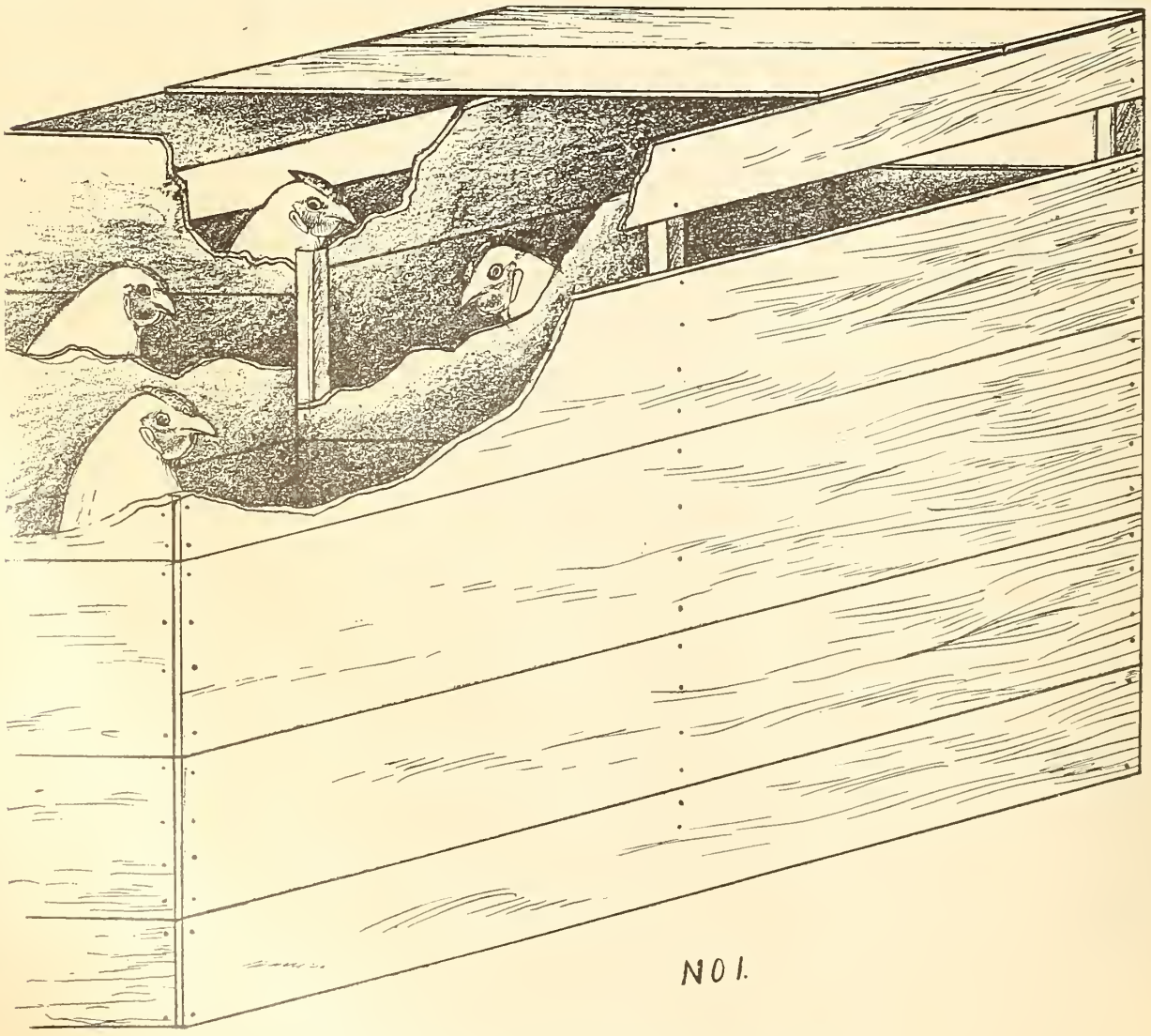
your birds will not only be properly cooped at the show, but correctly returned at the close of the exhibition.

Name .....
Town .....State .....
This coop contains .....
For exhibition at .....
Date .....
Band No..... Sealed band .....
Return at close of show to above address.

A card of this kind printed on strong paper and properly attached to your coops will insure the correct return of every specimen entered at any show where special cooping is provided, and when birds are shown in your own coops then it is well to have the card attached for the information to the secretary and express company, as it is no small task to properly care for and return to proper destination a large exhibit of birds.

We show on this page a drawing of a shipping coop which we have used with entire satisfaction. It is made of three-eighths inch stuff, sides, ends and top. There are four corner posts one inch square; bottom is made of one-half inch stuff, nailed on to one inch cleats, the bottom being securely fastened to the four uprights or corner posts, as well as to side of coop. A coop like this will weigh from five and a half to eight pounds, according to size, and will stand the roughest kind of handling without breaking. The ventilating space near the top should never be more than one inch wide, so in case two coops should be set side by side, the birds will be prevented from fighting. This is a very important point, as many good birds have been ruined by allowing too large an opening for ventilation.

In Fig. 1 is shown what is called a compartment or pocket coop. This is made 30 inches long by twenty-four inches wide and 24 inches high, has four compartments, each compartment twelve inches by fifteen inches. This coop is used to ship four females and each



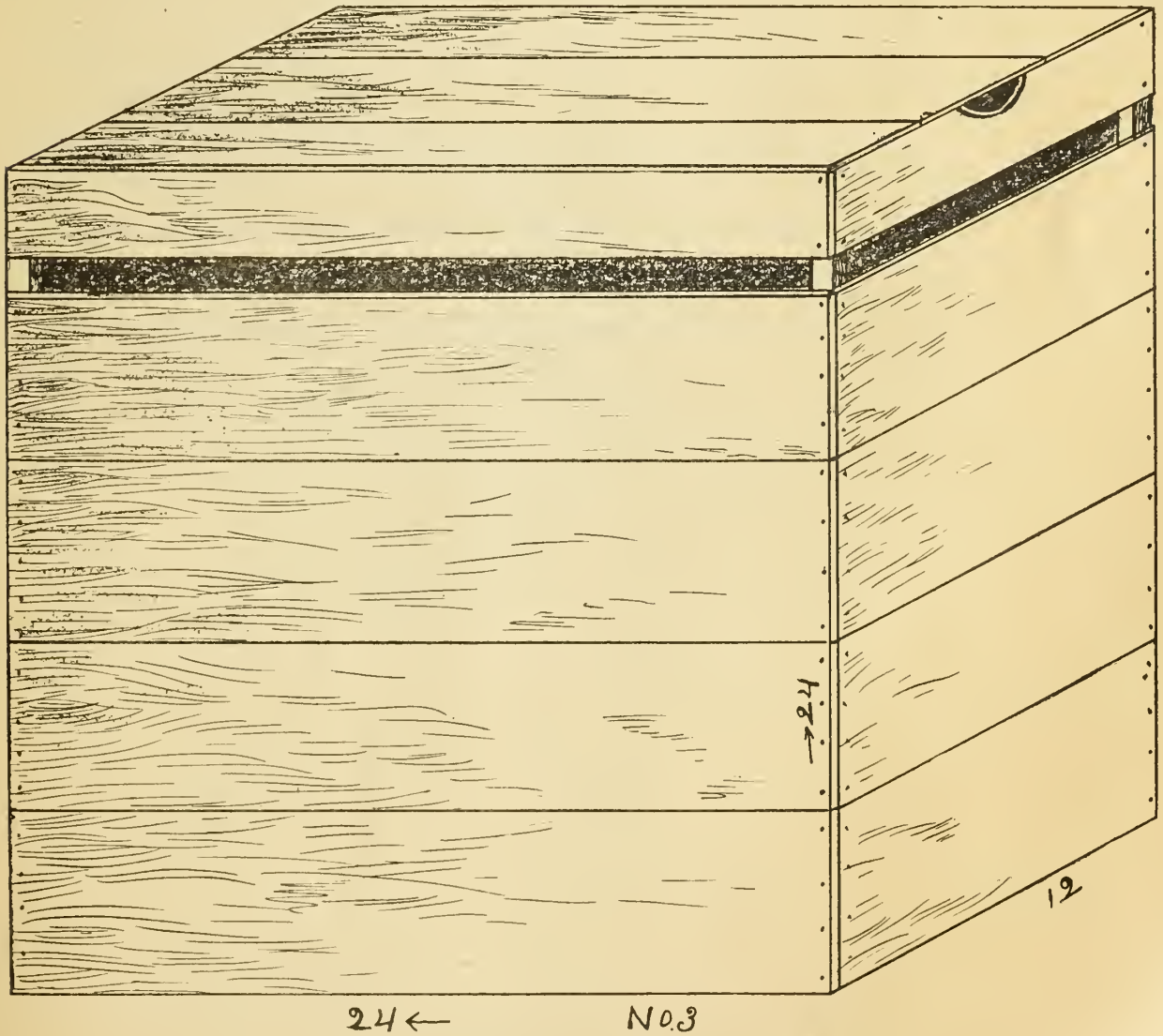
INTERIOR COMPARTMENT SHIPPING COOP.

compartment bears its respective card, giving number of band and variety of fowl as shown on sample card previously mentioned. Coops like Figs. 2 and 3 can be made up of waste material and at odd times, if only a few are needed, but if many are used then we would advise that they be purchased from some reliable coop manufacturer, as they can be furnished knocked down cheaper than the average man can make them. Coops similar to Fig. 1 can be made smaller or larger as would best fit the case, but for convenience in handling, four birds in a coop we have found to be the most practical. One thing that we wish to caution our readers about in using coops of this kind, or in fact any kind, is the bedding. Straw is good, especially if run through a feed cutter, but if white birds are to be transported, then be very careful that you use only wheat straw, or wild prairie grass, as oats straw or millet hay with the seeds in it will stain the plumage if any water gets on it, and it would be next to impossible in making long shipments not to get them stained. We have found nice bright wheat straw, cut fine with a clover or feed cutter to give the best results. When birds are properly cooped and bedded, with a full feed of cracked corn, only allowing sufficient space for comfort, they will reach their destination with no loss in weight, when if large coops are used so they can move around and worry themselves, as much as half a pound loss in weight is often recorded in a single day.

R. E. Jones.

HOW TO SHIP.

While it seems that the express agents should know how best to ship poultry and live stock of any kind, on any occasion, it is a lamentable fact that nine-tenths of the local agents do not, and many do not care to learn. All they know is to "charge enough," that is when they are not sure what is correct, they put the price at the highest possible rate per hundred or fraction thereof and let it go. I would much prefer to



SHIPPING COOP FOR SINGLE BIRD.

ship from a small office, as I can get better service, the agent at that office soon learning just how to bill out your stock, and in place of giving you the "worst of it," will always give you the benefit of the doubt in weight and when once billed out a shipment is seldom changed. When shipping to an exhibition it is customary to pay double rates which returns your stock free after the exhibition. Now this rule is all right and good provided you intend returning all the stock, but should you send quite an exhibit and expect to sell several, you would be losing in prepaying both ways. According to the express companies now as to shipping fancy poultry the rule reads as follows:

"Rule 12 (a) Fancy poultry or pigeons in cloth coops, and pet stock including dogs, boxed or crated, that have paid double merchandise rate to fairs and exhibitions, may be returned free, if accompanied by a certificate from the secretary that they are being returned to the original owner. (b) Fancy poultry or pigeons in slatted coops sent to exhibitions, will be charged single merchandise rate each way."

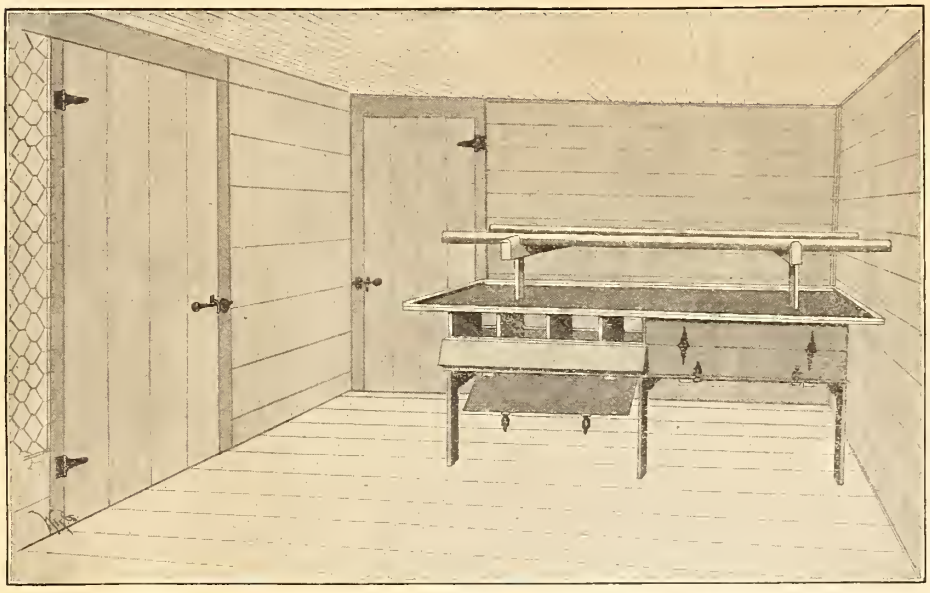
You can readily see that if you ship in wood or slatted coops the rate is single merchandise each way; this gives you a chance to return your stock at actual weight. In other words should you ship twenty coops to the show at a weight of five hundred pounds and sell several birds while there, returning the coops only, you would pay on the actual weight returned, while on the other hand you paid double rate going, and would be out the rate on the number of pounds missing on the return trip. This rule is seldom noticed and never called to your attention by the express agents when you are shipping birds to a show, yet it is there and if they know it and you do not, nothing is mentioned and you are required to pay the usual double rate, and this returns the stock free. We have in our office a full and complete book of rules and rates of the express companies to all points in the United States, Canada and Mexico and will say that every breeder that does shipping and wants his stock to reach the purchaser as cheaply as possible and in good shape should not be without one. I have not paid double rate for a show since these rules have been put into effect and have often saved the full amount it cost to return, as I have shipped a few only to a show and sold the entire lot, hence I had nothing to return, while had I prepaid double rate I would have been out this amount. Now these are facts that should not be lost sight of; make a study of the rules of the express companies regarding the shipment of poultry and keep posted, and then when an express agent wants to tell you that you are wrong, refer him to the rules and let him know you are posted, and if really ignorant he will have learned a lesson, or will not try to take advantage of you again thinking you do not know the rules as is often done. I know these things occur, as I have come in contact with just such agents and have shown them where I was right, and for this reason I would make the selection of a small office from which to make shipments, the agent usually working on a commission basis learns to appreciate all the shipments you give him, does not try to take advantage of either you or your customer and is generally accommodating. While one might think that we had something against the express companies, such is not the case. We are simply cautioning our readers how to protect themselves and if our advice is followed they will not be taken advantage of. Express companies like all big corporations make rules that absolutely protect themselves, but we have always found them ready to meet us half way on every proposition where we were mutually interested. Remember that kind and courteous treatment to the employes of any corporation is one of the shipper's best stock in trade.

THEO. HEWES.

MAMMOTH BRONZE TURKEYS

WINTER POULTRY HOUSES.

There is no subject of more importance than winter quarters for our growing stock. To be successful one must begin in time and make preparations so there is no crowding of growing stock late in the fall, if we expect good results from our young pullets in the way of winter eggs. Good winter quarters, as a rule, are expensive, and poor ones will prove more expensive before the winter is past, as from a lot of females poorly housed no eggs are realized, and a lot of frosted combs on males will convince anyone connected with the business that the best is far the cheapest in the end. Whether a plant is conducted with a view for winter eggs or not, it is well to give the birds good, warm quarters if we expect good results from them in the breeding pens the following spring. True we often hear the remark that breeders do not care for winter eggs and would be glad if they could hold their birds back, but if this holding back is from not having the proper care in the winter, poor results will subsequently follow in the spring.

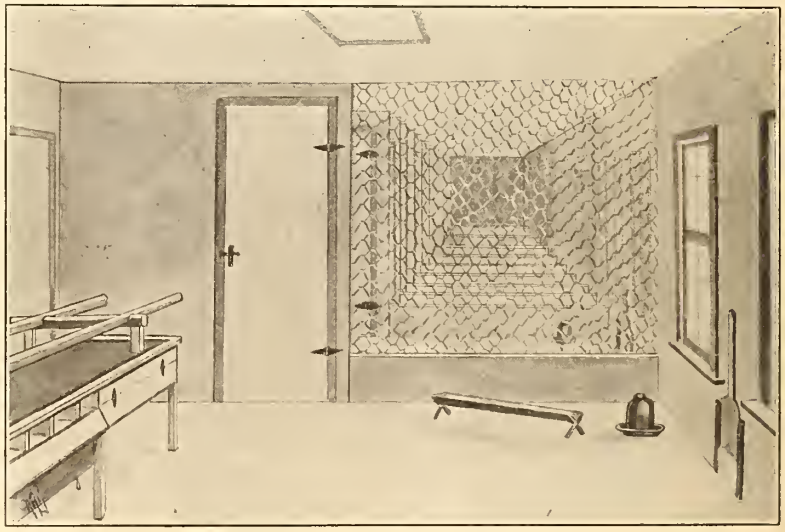


NEST ARRANGEMENT—WINTER LAYING HOUSE.

I have studied the winter houses on every successful plant that I have visited. Some, while well constructed and serviceable, are entirely too expensive for the average breeder to construct, especially so when cheaper ones give as good satisfaction. I believe that the ones illustrated herewith are as good winter houses as any I have found, and they are so constructed that the same houses used for winter layers or for confining young males, can be used to advantage during the summer months as breeding pens for choice breeders.

There are presented two views of the interior of buildings, which will demonstrate their arrangement for winter use. The two illustrations are views of the same room, and show not only how rooms are divided, but the inner arrangement. These houses are 250 feet long, have feed room in middle and hallway four feet wide on north side; all the rooms are 12x12 inside measurement, and accommodate twenty-five females to each room, or 500 to each house. The outside walls are all of double thickness of lumber, with paper between. The partition between hall and rooms is also solid wood, between runs the partitions are boarded up as far as the outer edge of perches, so that no direct draft is over the birds at night. Two windows in each room face south.

Runs on the outside of the building may be 12 feet wide and any length desired. But in all cases the outside yards should be sufficiently large to give the fowls ample room for exercise. The dimentions of the runs may depend much, however, on the veriety of fowls to be kept in them.



INTERIOR OF WINTER LAYING HOUSE.

THEO. HEWES

PRACTICAL SUGGESTIONS.

One of the most costly mistakes I have made in the chicken business had to do with the arrangement of my fences. My breeding houses are scattered about (the permanent ones) with an eye to the availability of site only, for the breeders, and when in the early spring I move out my outdoor brooders the trouble begins. The fences of my breeding yards are of two-inch mesh, some with a foot wide baseboard and some without, and little chicks will pass either very easily in a short time, and when they do, in some mysterious way they pick up lice, and lice in a brooder are a fruitful source of loss. Had I been far-seeing enough to divide my plant into three permanent sections, with absolutely chicken-proof fences, I should have been saved much loss. One section for adult breeders, another for colonizing stock and the third for the outdoor brooders and brooder house chicks. It is a hard matter to produce breeders of rugged vitality if they have been penned as youngsters into comparatively small yards attached to brooder houses. I have a lot of sectional fence that is built by attaching one-inch mesh netting to sixteen-foot boards, using an upright at each end and in the middle. Each section has a hook at one end and in the middle and an eye at the other, and a fence can be placed of any desired size and shape in a very few minutes and removed as easily. It is hardly necessary to state that these boards are set on edge, which gives a three-foot fence. In addition to these fences I have a few box runs, that is, a frame of about three by six feet and two feet deep, entirely closed with netting except floor and one opening at end that corresponds to the trap door in the brooder. Of course, there are exceptions, but ordinarily the chicks stay in the incubators for forty-eight to seventy-two hours, and are then divided among brooders heated to receive them. If a three-compartment brooder, the second day they are allowed in the sun parlor or exercise room, and if the weather permits, the third day finds them running about in the box run. They are confined to this a week or perhaps until the sod shows signs of wear. It is then removed and a sectional fence placed to enclose a few bushes and the brooder, and some shade is provided at least. The sectional fence can be removed when the chicks are growing rapidly and have learned to answer some call for food, so that in case of sudden storm they can be rapidly made snug. I used for a time to imitate the hen's cry of hawk until I found that while the majority fled to the brooders for shelter, some of the wildest would shelter in the nearest possible spot and lie so close that search often failed to dislodge them. It is inevitable that some of the summer storms will cause loss, but as an offset the survivors will mature into breeders of strong vitality that can stand forcing for egg production without loss of fertility in the eggs or stamina in the progeny. One of the most serious faults with the brooder production of breeders as ordinarily practiced is that it eliminates the essential law in keeping up the standard of any stock.

The survival of the fittest. With a hen only the strongest, most rugged chicks survive, while a brooder will raise lots of chicks that are physically degenerate. This accounts in some measure for the trouble amateurs so frequently experience in producing stock year after year that easily reaches standard weight. Of course this applies to breeding stock only. Broilers I give only enough range to provide green food and exercise. They are forced from start to finish and are entirely unfit for anything but food. I said above that with a hen only the strongest survive; quite frequently those surviving are so dwarfed and stunned by bad care or neglect as to be worthless for breeding also.

I can not believe that any hen is absolutely free from lice. Like David Harum, I believe "a few fleas are good for a dog; keep him interested." The constant struggle is to keep the hens from being uncomfortably interested. To that end I use each week a commercial lice killer on perches. The droppings platforms are cleaned twice a week and an ample dust bath provided. Tobacco dust is used freely in all nests and twice a year hot whitewash with crude carbolic acid is used inside and outside of fixtures and houses. Now, when you set a hen, plenty of tobacco dust will keep her and the nest free of vermin. But when you coop her with a clutch of chicks the weather will frequently prevent, for days at a time, any opportunity for a dust bath, and then the lice that have managed to live through the "late unpleasantness" begin to take notice. It is safe to say that a bad chick is a lousy chick, and the time to prevent is passed. The best thing I have tried is a dope made by working a tablespoonful of powdered sulphur into a fourth of a pound of lard, with a teaspoonful of kerosene and ten drops of carbolic acid added. When this is thoroughly mixed a daub on the head and under each wing will soon relieve the chick without bereaving you.

If you want to use a liquid lice killer, it is best to take some slack lime and stay right with the chick with your fingers on their pulse, so that the relieving process won't go too far. Don't, I beg you, do is I did once upon a time, paint the under side of a low head room hover, surrounded by curtains, with lice killer. In the middle of the night it occurred to me that such a plan was an experiment and experiments should be watched. It was so warm that I wandered out to the brooder thinly clad, and it was not until I was exceedingly busy fanning chicks in a vain attempt to restore life that I discovered how plentiful the mosquitoes were. I have never seen advocated the painting with a good house or floor paint of the inside woodwork of brooders, and yet this is one of the

simplest and best preparatory measures for success in rearing chicks. Obtain your brooders far enough ahead of time required for use to allow the painting with two good coats of paint. Doing so seals up each crack and crevice that could harbor lice or mites, reduces warping and cracking and, best of all, prevents the absorption by the wood floor of impurities. A painted floor can be scrubbed very quickly and dries at once, where a bare floor is very slow to dry. Of course, this has nothing to do with the litter in brooders that is essential with any floor, and sand while cleanly, is a very poor litter for little chicks after they are a few days old. I find that the refuse left in the hay loft after timothy and clover hay have been removed makes the very best possible litter. It is dust dry and an inch or more of depth is not beyond the strength of little chicks. Then it is full of hay seed and clover seed, heads and leaves, which is ideal food to start chicks on in connection with other things. Since using this chaff I have found little need of charcoal as a regular article of diet. Of course, if you feed too bountifully your chicks will only eat the most attractive part of the ration and leave the rest. Where there is much coarse fiber in the refuse I screen it with a one-fourth-inch mesh to remove most of the stalks. I not only use this for litter, but in winter I procure this trash baled and use as high as 40 per cent. in mash for breeders with most gratifying results. It is practically in itself a balanced ration and you have only to mix the rest of the mash accordingly. My greatest trouble in feeding has been to find something with great bulk for a low food contents without indigestibility and that fills in perfectly. I have never had a crop-bound chicken since I began its use and it is equally good for ducks.

—POULTRY AND FRUIT.—

I want to say here that if I am attempted to advance any theories regarding the poultry business, I will label them as such. This is simply a plain statement of what I know to be practical. I have had to advance very slowly at times, but that necessity has frequently saved me costly errors. One rather costly error in money and time was due to an elaborate article on poultry and fruit raising combined, and I did not discover the error until too late to correct it in most cases. If you plant fruit in your poultry yards, you are providing shade and future lunches for the fowls, but disappointment for yourself for some time. The first difficulty comes in protecting the mulching about the young trees from being scratched away by the fowls. After the trees are established your first light crops are utilized by them. I have not yet attained that enjoyable point where a surplus exists after their appetites are satisfied. I am told that the time will come and I try to believe it. That is theory. As for grapes and currants, etc., you will never have a chance to see them ripen, if your chickens are like mine. I was compelled to fence off my vineyard, thereby badly restricting the yards of one permanent house. Currants and raspberries I move bodily and have been well repaid for doing so. That is an example of the loss an illy-considered article may do one.

—A CHEAP BROOD COOP.—

It occurs to me that a brief description of a very satisfactory hen coop is reasonable, and I will try to crowd it in here. A box 2 feet by 1 1-2 feet and 15 inches deep is about the smallest practicable, but any dimensions larger are feasible. Remove cover of box carefully. Select the soundest end and nail vertically two 1x2-inch strips 10 inches apart and extending 5 inches above end. Now nail a board 6 inches wide across the end by using those two strips. This gives you one end 6 inches higher than the other or the sides. Now mark off a doorway 1-2-inch inside of strips and 10 or 12 inches high, saw out this 9x12 block and you have a 1-2-inch flange on each side. Cut a piece of board 10x13 and hinge it with cheap hinges or straps to one strip and put a wooden button on the other strip, the door fitting in between them. Cut three strips of lath 13 inches long and two 10 inches. Lay the two strips down ten inches apart from side to side, with the third lath evenly between them, and nail the two short pieces across the ends of the others, giving you a little gate 10x13 with one slat in the middle. Now, this will set in behind the hinges when door is open and the button will secure it just as it does the door. For the roof cut two boards 6 inches wide and 2 feet 6 inches long, hold them parallel on edge 18 inches apart and lay a light roof on them, letting it overhang the sides about three inches. Cover this with any waterproof paper and put on a lath at each side and end to batten it down. Now this roof will set down over the box with the slant from that extra 6 inches of height at one end and the side boards 6 inches wide will cover the gaps on the sides of box. Near the bottom edge of those same 6-inch side pieces drive a single good nail straight through into box end, one on each side, that gives you a pivot that is secure and saves hinges. The roof lifts from the front like any box lid, swinging up on those nails. Bore a row of large holes in that 6-inch board in front for air holes, whitewash inside and out or paint and you have an excellent weather proof coop for a hen with chicks. It is sometimes an advantage to nail a couple of strips across bottom to hold it a little from the earth.

D. W. Ingersoll.

Poultry Houses.

The principal requisites for a good poultry house are the same, whether the house is for the city fancier or the poultry farmer, the small breeder or the breeder

of hundreds. Whether we are breeding for fine feathers, eggs or meat, our foundation must be strong, healthy, vigorous stock, and to obtain and retain this health, strength and vigor, it is necessary to have suitable buildings.

"Dry, draft-proof, clean, convenient." These four words should be the "handwriting on the wall" to every one who contemplates the erection or maintenance of a poultry home. The locations and plans may be numerous and varied as the styles of speech in vogue at the Tower of Babel, but if either plan or location can not be made to meet these four requirements it had better be abandoned.

A poultry house must be kept clean, consequently it should be arranged as conveniently as possible to admit of this being done without unnecessary labor. Another important point is this: A house may be arranged to carry its normal quota of fowls in good order through the winter, but it will almost always become crowded during the fall when the young stock is maturing, and before the final culling and sales have disposed of the surplus. As at this season we generally have a great deal of wet, nasty weather, it usually follows that the house is in anything but a desirable condition at the beginning of winter, when it should be at its very best. To avoid this state of affairs extra dropping boards and roosts should be provided, and extra care and labor expended to keep the house clean and free from vermin.

When new houses are to be built the ground should be graded up, foundation laid, frame erected and roof put on as early in the summer as possible, and if floor is to be of earth, it should then be filled in to the desired depth or a little more. Now sheathe the north wall, and if necessary the balance of the work can be left till fall, and even if not necessary, it is advisable, as it allows the interior to become thoroughly dry and sweet during the hot summer months. If it is necessary to complete the building at once, then all windows and doors should be left off or wide open during the summer.

Timely Hints.

If you expect success in the poultry business you must begin at the bottom and work up.

Combine utility with fancy if you ever expect to make a lasting success of the poultry business.

Remember that it is always in season to clean and disinfect the quarters. Do it thoroughly and often.

Lice and filth are happy playmates. Where one is, there will the other be found also. Let one increase and the other must increase with it. Better get rid of both.

Warm water may be good for the fowls in the winter, when the thermometer is below zero, but during the hot days of the summer they should have only fresh, cool water.

Do not change breeds every time the wind blows. There is no perfect breed, and when you find a good point in one you find a bad point in another, and so on around the whole family.

There are no iron-clad rules in poultry keeping. One person succeeds best one way and another person in another way. Pens from good laying strains lay remarkably well one season, and another season, under the same or better treatment, do not pay expenses. But the idea is to keep right on, and you will find that lots of good comes with the bad. Success does not come without an effort.

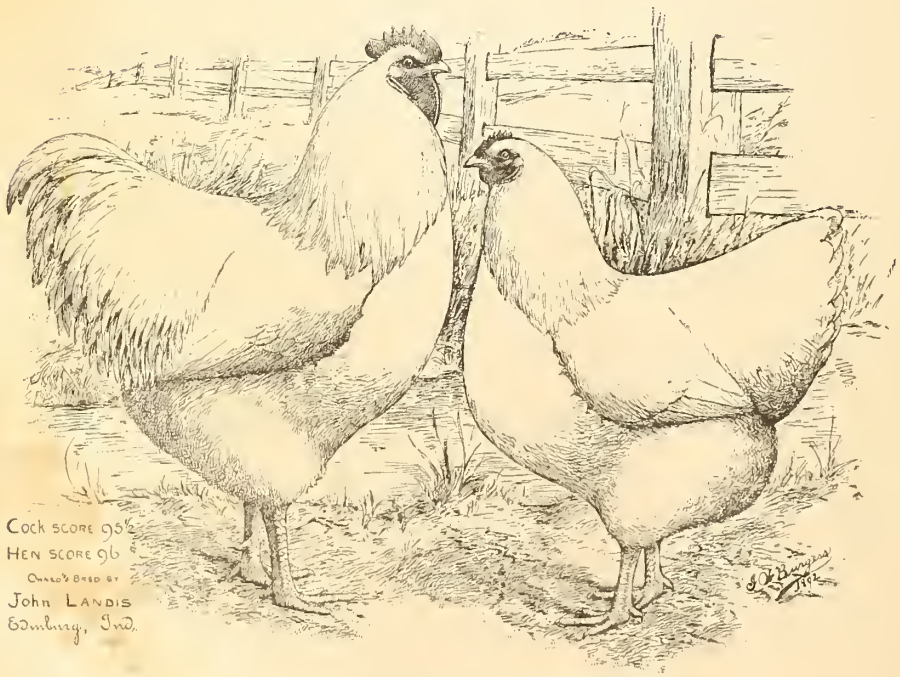
Make a severe fight against the lice. You may think you are free from these little pests, but "they come at an hour thou thinketh not." Give everything a good cleaning up about the house and yards. Spray the walls with coal oil emulsion. Dust the hens well with insect powder, and provide them with a fresh dust box. During the warm weather lice will increase rapidly.

Cleaning and Whitewashing.

In cleaning our poultry houses, we believe in making a thorough job of it, and after everything movable is taken out, we burn the contents of the nests, also all litter from the earthen floors. We then remove the earth from the floors to a depth of about four inches; then after we are through whitewashing we refill with fresh earth so that the floors in the pens are about six inches higher than the ground on the outside. It would seem that most anybody could do a job of whitewashing correctly, but really it is surprising how much better the houses will look when proper care has been taken in applying the whitewash. All cracks should be carefully filled and the coat spread evenly, and if care be taken we will have a beautiful, clean and attractive house that is a pleasure to look at.

Our method of making whitewash is as follows: Take one-half bushel of fresh lime; put in a barrel or tub and pour on warm water to nearly cover. Then cover the barrel while slacking, care being taken to see it does not become dry and burn, adding water gradually until it is a fairly thin batter. Add five pounds of salt, dissolved in water, also five pounds Spanish whiting and two ounces of carbolic acid. It is advisable not to apply whitewash too thick, as it will look better, is easier to apply and less liable to peel or crack off. Some recommend applying whitewash while hot, but this is rather more bother than most people care for, and with the carbolic acid present the heat is hardly necessary.

IDEAL WHITE LEGHORNS.



WHITE PLYMOUTH ROCKS.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